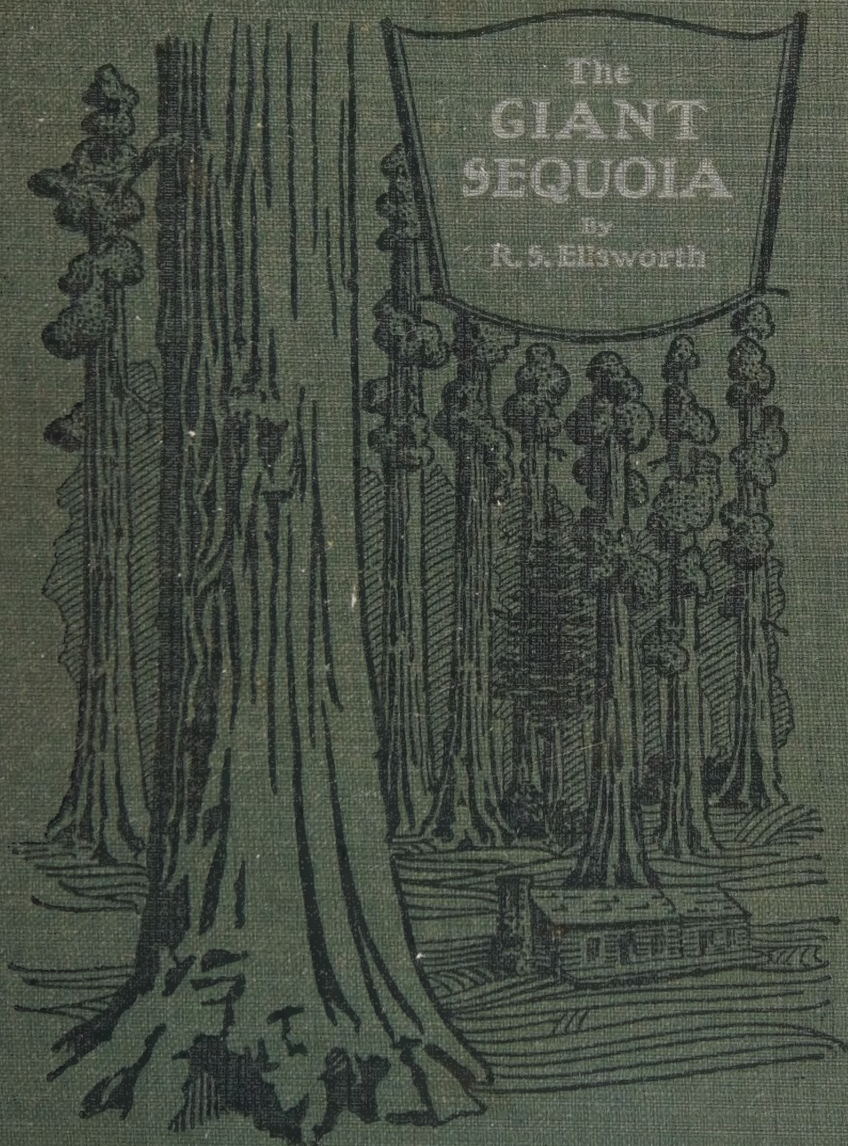


The
**GIANT
SEQUOIA**

By
R. S. Ellsworth



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The Giant Sequoia

AN ACCOUNT OF THE HISTORY AND CHARACTERISTICS
OF THE BIG TREES OF CALIFORNIA

BY
RODNEY SYDES ELLSWORTH

111

WITH TWELVE FULL-PAGE ILLUSTRATIONS



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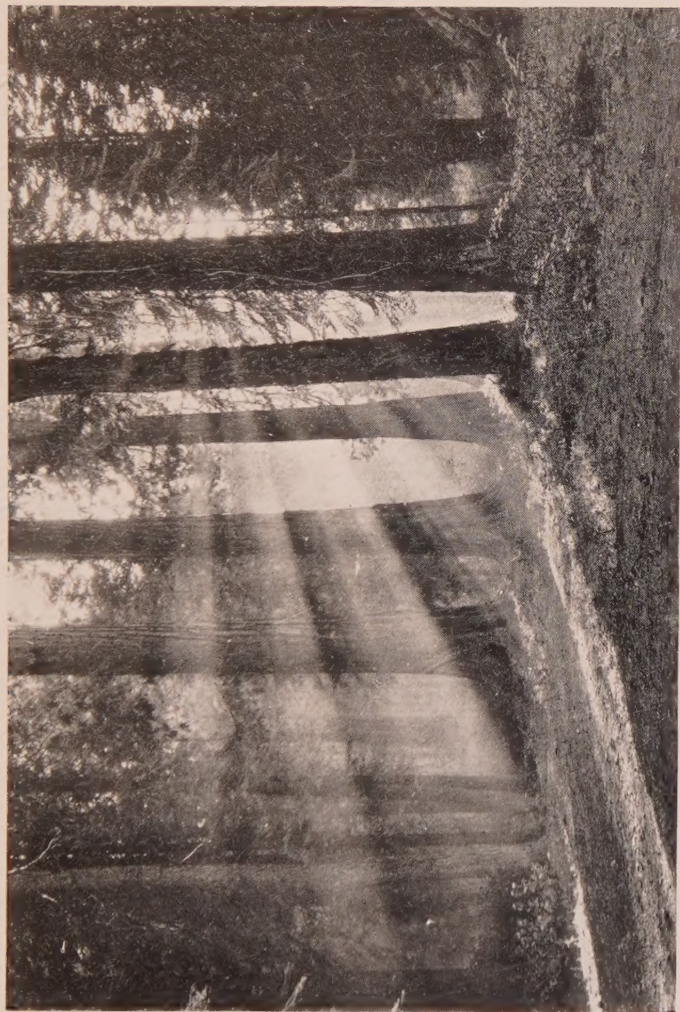
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MARIPOSA GROVE

THE SUN WORSHIPPERS

Only at sunset does the Sequoia lose its dignity to become a thing of beauty

Photo by H. S. Hoyt

TO MY GRANDMOTHER

*A living thing,
Produced too slowly to decay,
Of form and aspect too magnificent
To be destroyed.*

—WORDSWORTH.

PREFACE

THAT imposing calm which the great Sequoia of the Sierra Nevada exerts over many came to be individually impressed upon the author during a summer's residence in the Mariposa Grove two years ago. Indeed, it was the persistence of this spell that made him wish to know more about this noble tree and caused him to inquire into its literary and scientific associations. These studies at length stimulated another desire—that of making the gist of the scattered and heterogeneous mass of material, ranging from popular rhapsodies to scientific treatises, available and accessible to all.

It was likewise the author's ambition to effect a symmetrical presentation if possible of both the popular and the scientific aspects of the subject. Hence, the rhapsodies have been robbed of their purple and the treatises have been faintly touched with imagination to make them possess an interest for the general reader. By this it must not be presumed that gravity and fidelity have been neglected. They have been preserved throughout.

This book has been written primarily for the good of the greatest number. It is not by a botanist for botanists, but by a tree-lover for tree-lovers. And if from its pages there emanates, however faintly, something of the inspiring and

PREFACE

enobling presence of the Giant Sequoia, the author will not have dusted off many an old volume and entertained himself with an examination of its contents in vain.

The author is greatly indebted to Miss Cristel Hastings for her untiring aid in the preparation of the manuscript. He also wishes to extend gratitude to Mr. William T. Amis, who has rendered much invaluable assistance and counsel. Heartly thanks are due various Professors of the University of California from whom the author as a student and friend has received many helpful criticisms and suggestions.

RODNEY SYDES ELLSWORTH.

Berkeley, California,
April 17, 1924.



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PART ONE

Sequoias *of* Yesterday
and Today

CHAPTER I

THE AULD LANG SYNE OF TREES

THE Sequoia is nature's most magnificent endowment. King of trees, it has no rival in size the world over, nor is it approached among living things in age. Noblest of all conifers, it has the grandeur of granite and the solemnity of marble. Venerable in aspect, it savors of great antiquity, seeming always to wrap itself in the memories of the past. So striking, indeed, is this feature of its appearance that the intellectual traveler often wonders if its race has played a grander part in the past. Is it a living survivor of an extinct age of monsters?

Time was, and not long ago, when such a question bearing on the antiquity of the Sequoia would have been lightly considered. Now, however, mankind is not altogether satisfied with things as they are, but is mindful of how they came to be so, and the ceaseless searches of science are unveiling the mysteries of the past. The spade unearths a coin whose imprint betrays the beliefs or customs, the finish or crudeness, of an ancient civilization. The discovery of a clay tablet, the uncovering of a ruined temple or a forgotten tomb, sheds fresh light upon the history of a people. Bit by bit the evidence accumulates, and as the vision of the past becomes less dim science

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is better able to conjure up before the mental eye the imposing pageants of a world that has passed away.

Shakespeare calls the world a stage. The allusion, though, is confined to men and women. But as the scientist views the great earth-drama that has been enacted throughout the ages he sees a far more extensive application of this thought. To him "the races of the children of life" are the players, by reason of the fact that all life has been superseded by more complex and more highly evolved forms. Indeed, for millions of years countless multitudes of living creatures have played their little parts on this earthly stage and have gone their way into oblivion. The majority have left as little record as the autumn leaves that drift by the wayside. These are the so-called "lost creations." Yet a sufficient number have been preserved for the later instruction and delight of man. "Everything," observed Emerson, "in nature tends to write its own history. The planet and the pebble are attended by their shadows, the rolling rock leaves its furrows on the mountain-side, the river its channel in the soil, the animal its bone in the stratum, the fern its modest epitaph in the coal."

These remains filed away in the archives of nature's great storehouse constitute the record of the rocks. And as science reconstructs a civilization of yesterday from its rude implements, in a similar manner it interprets the mute meaning of

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these fossils in the rocks. The dry bones and empty footprints are given animation and pictured as they are supposed to have been when alive. Great flying reptiles, called *pterodactyls*, with an enormous wingspread of twenty-five feet, have fallen into Miocene seas and have been entombed with the leaves and muds of their shallow bottoms. Huge reptiles, called *dinosaurs*, have stalked across the mud-flats of primeval lakes, leaving their broad footprints in the oozy surface. The tide has come in and gently covered the impression with a fine sediment and preserved it forever. Further deposits of sediment have accumulated and the whole become submerged, until, under constant pressure, they have been compacted into rock and in the course of time have been raised again to dry land.

The record of the rocks discloses the fact that the Sequoia flourished on the earth when these dragons of old time and their wierd kin inhabited it. Its forests extended over three continents and it blessed with its shade these creatures more strange and huge than the earth has since borne. Under its high, arching columns *dinosaurs* took toll of all that could be conquered. Within sight of its imposing forests others, equally formidable, wallowed in shallow seas, while overhead soared *pterodactyls*, neither bats nor birds, but giant lizards that had acquired the power of flight.

This was millions of years ago. It was during the middle period of life, or, what geologists

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term the Miocene. It was before the advent of fur and feathers—aeons, almost, before man's coming. In point of time the antiquity of all living things on earth today is of a recent yesterday when compared to the antiquity of the Sequoia. The frail tenure of human works is as but a thousand years amid eternity; nothing; a mockery.

The pick of the fossil hunter has unearthed fossil remains of Sequoia leaves and cones in strata as early as the *Triassic*. This period represents the morning of reptilian life and is the first of three great ages of the Miocene. At its advent moving life had already safely crossed the borderline of its dependence on water for existence and had succeeded, slowly and laboriously, in invading dry land. Hence, the Sequoia as a race has a claim to almost fabulous antiquity.

Memorials of the Sequoia's ancestry are more abundant in the rocks of the two succeeding periods of the Miocene, the *Jurassic* and the *Cretaceous*. Under the lava flows of Mt. Shasta imprints of its leaves and cones are found. This is indubitable evidence that the Sequoia existed in California at that time. Fossil remains have also been found in localities ranging from "France and Hungary to Spitzbergen and from Greenland to Oregon and Nebraska." These stratified remains offer positive proof that the Sequoia was a great genus covering the entire Northern Hemisphere and that the now desolate Arctic regions, which were then warm, were luxuriant with

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many of its species. In short, the Sequoia was one of the chief garments of the earth's vegetation during Miocene times. Its forests must have been the most imposing the earth has ever known. Truly, they were the forests primeval.

It is not a little remarkable that the Sequoia was in existence even before the very mountains which are enobled today by its presence. The vagaries of mutability have been such that it was actually present on earth during the genesis of the Sierra Nevada and saw this range lifted to its place in the sun. Indeed, the eternality of the hills is a misnomer, for mountains have their birth and their youth, their old age and their obliteration. Like successions of living forms they have had their entrance and exit on this terrestrial stage.

During the early period of the Miocene, that country which lay between the Rockies and the Pacific was a flat plain of low relief, with meandering streams and vague divides. Occasional rounded hills broke the monotony of this plain. These were but the abraded stumps of a pre-existing mountain mass—the ruins of mountains that had been. About *Jurassic* time a general disturbance occurred in the present region of the Sierra Nevada. This was accompanied by an intrusion of a vast body of molten rock which, when solidified, became the granite of the Sierra. During the *Cretaceous* the entire region between the Rockies and the Pacific again awoke and began to bulge at slow and intermittent intervals.

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The Sierra block had its origin during one of these upheavals and acquired a slight westward slant.

During the age that gave man to the world, the Sierra was uplifted to the light. About the dawn of the *Quaternary*, the last of the great divisions of geological time, the greatest manifestation of Sierra mountain building took place. This convulsion of the earth hoisted the snowy range to its present sublime elevation.

Following this upheaval came an age of ice. It is to this period that Yosemite Valley owes its glaciation. In fact, the present indefinable charm and fierce grandeur of the High Sierra are legacies of this reign of ice. However, the glaciation of the Sierra must not be correlated with the continental glaciations which ushered in the age succeeding the Miocene. The former glaciation is "more properly to be regarded as corresponding to the very last episode of that long and varied chapter in the geological history of the continent," states Lawson. Though the final uplift of the Sierra block is a long time past as years go, geologically speaking it is not remote. Indeed, the Sierra Nevada might "safely be placed among the young and giddy mountains of our planet." From the comparative point of view, on the other hand, the waste of years that have elapsed since the Sequoia first waved its magnificent evergreen dome toward the heavens is bewildering.

Impressive as the evolution of the Sierra must have been, few of the dramas of the earth which

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science has restored are more wonderful than the restriction of the Sequoia exclusively to the mountains of California. The record of the rocks following the great Age of Reptiles tells quite a different story. With amazing abruptness all the rich diversity of reptilian life apparently ceased. Some change seems to have occurred, blotting it out forever, for not a scrap of evidence remains of its continued existence. The *dinosaurs* are no more; the *pterodactyls* have vanished. A new type of life, that of the mammal, now holds dominion over the earth. Most astounding of all, the Sequoia still carries on, even to the present day—living survivor of the Age of Reptiles.

Authorities are not agreed concerning the causes that led to the extinction of the reptiles. Science still ponders over the mystery. A feature so extraordinary seems to demand an unusual explanation. Causes of a violent cataclysmic nature are advanced as valid interpretations. Yet science refuses to take cognizance of universal calamities and considers them as apocryphal because they are too unnatural. Climatic conditions, in the main, are probably responsible, for it is upon climate that the wealth or poverty of life on the globe depends. That which was a land of comfort, of abundant food, and of continual summer may have become, through a process of alternate haste and deliberation, a land of long winters, of bitterness and hardship. The good days of the world were exchanged for hard times,

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and those who could not survive were gathered to their forefathers. This, together with volcanic eruptions which took place on a stupendous scale, followed by glaciations of continental extent, apparently conspired in the ultimate undoing of reptilian life. These causes, in all likelihood, are responsible also for the shrinking of the majestic Sequoian woodlands to a mere fragment of their ancient, vast extent.

About the end of the Miocene the earth became intensely active. In its agitation some of its seething interior was exuded to the surface in a deluge of lava. At the same time fountains of molten rocks shot up from volcanoes, causing the heavens to rain fire about them, and sifting ashes afar over the earth. Rivers and lakes floated up in immense clouds of steam over which the blazing beacons suffused wierd colorings—lights and shades of an inferno that not even the pen of a Dante would have the temerity to attempt to describe. A land of beauty had become filled with forms of the gloomiest and ghostliest grandeur. The great *dinosaurs* looked with disquietude upon it all. Unable, by reason of their cumbersomeness, to migrate to a gentler clime, they stoically awaited their doom. The *pterodactyls*, terrified, fluttered to the ground, flapping their great useless wings as the unearthly flashes from the heavens fell upon them. The noble Sequoias, even more impotent to make a retreat, held their ground until set afire or enveloped in floods of

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molten lava. At length, having exhausted its fury, this agent of wholesale ruin ceased as if stricken lifeless in the midst of its maddest rioting, and the land became a far-stretching waste out of which life had apparently gone forever.

The unknown complex of causes which brought about the ice age that followed probably completed extermination of the reptiles, and it certainly brought the Sequoia, as a race, perilously near to extinction. The temperature became too cold for life adapted to the warm conditions of the Miocene age. As a result, reptilian life paled and declined, until finally its feeble flame flickered out entirely with the arrival of the glacial epoch. The vast amount of water that had been vaporized during the volcanic eruptions returned to the earth in the form of snow. This accumulated in such enormous quantities that continents came to be white worlds where the vacant sky communed only with the silent ice. Pulseless and cold, these vast continental ice caps were as eloquent of death as were the fiery lava flows. Uncharted, trackless seas of ice they were, with all traces of earthly travail buried far beneath them. And a terrible solitude was the lord of this universe.

The scientific world is equally perplexed regarding the mysterious chain of events that again caused the amelioration of climate. At any rate, the warmth of summer gradually overtook the snows of winter, and the ice wasted away. Like

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morning mist it vanished in the sunshine. Lakes filled the yawning throats of volcanoes. Light and beauty replaced ashes and death. Life, too, ebbed back from the southland and conquered the desolation, filling the vacant world with a glorious animation. But it was a different type of life that came. Mammals instead of reptiles now held undisputed dominion. Of all the rich diversity of life that flourished before the advent of the ordeal of volcanic fire and the chilling empire of ice, apparently only the Sequoia escaped utter destruction.

It is this singular survival that prompted John Muir to write of the Sequoia as a "tree which the friendly pines and firs seem to know nothing about. Ancient of other days, it keeps you at a distance, taking no notice of you, speaking only to the winds, thinking only in the sky, looking as strange in aspect and behavior among the neighboring trees as would the homely mastadon and hairy elephant among the bears and deer. It belongs to an ancient stock and has a strange air of other days about it, a thoroughbred look inherited from the long ago—the auld lang syne of trees."

CHAPTER II

THE GLORY OF THE MOUNTAINS OF CALIFORNIA

BUT two species of the genus *Sequoia* carry on the noble line in these feeble times. Scions of a race whose ancestors extend into the depths of the ages, they seem to be not a part of this puny world. Gigantic in proportion, they are not unlike uncouth vestiges of another age when all things were molded on a monstrous scale. Numbering their years by thousands, they are an "unaccountable oversight" in a world where lives are limited to the psalmist's span of years, and where there is no hope of gaining the length of days of Methuselah and his kin. Indeed, they appear to be more like mysterious strangers from some far star than solitary and lonely survivors in the midst of an unfamiliar new age. Patiently accepting the part of on-lookers, they disdain to take their place in the active ways of the world and continue to exist for no apparent reason other than to preserve the pristine glory of their ancestors lest it die with them and leave the coming years.

Rarest of all tree species, these two survivors are the Giant Sequoia, or *Sequoia gigantea*, and the Redwood, or *Sequoia sempervirens*. Both are im-

THE GIANT SEQUOIA

pressive in the mystery that hangs over their history. But it is only this that they may be said to have in common. In almost every other respect they are quite dissimilar. True, the Giant Sequoia is a grander and more massive edition of the Redwood. However, the former puts the latter in the shade as to girth, while the latter dwarfs the former as to height. The Big Tree is unexceeded among trees in girth; the Redwood probably outstrips all trees of the world in height. Rarely does the Big Tree lift its towering column of verdure more than 280 feet into the heavens. Yet it attains an amazing trunk diameter of 20 to 27 feet well above its immense swollen base. The Redwood seldom produces a trunk more than 15 feet in diameter and the average of the larger trees range from 8 to 12 feet. Trees 280 feet high are not altogether uncommon. Some even wave their evergreen crowns 340 dizzy feet above the ground—truly a prodigious altitude for living shafts of wood to attain.

The Big Tree keeps its youth longer than any known tree and for this reason is acclaimed the oldest living thing. Frequently it reaches as great an age as 2,500 years. A few Giant Sequoias are known to have passed their three thousandth year. Seemingly, this figure fails to convey a satisfactory comprehension of the magnitude of such a great age to the minds of popular writers. As a consequence, the age of this grand tree has suffered unpardonable padding. Nevertheless,



MARIPOSA GROVE

Photo by H. S. Hoyt

IN THE COURT OF THE GIANTS

THE GLORY OF THE MOUNTAINS OF CALIFORNIA

such estimates are not conclusive and rest only on the speculative notions of fanciful writers. The Redwood, on the other hand, while quite noteworthy in longevity in the tree world, scarcely sees a thousand summers. It must yield the palm in all honor to its greater cousin which ranks first in age of all the worthies of the tree kingdom, and, hence, in the world of living things.

The *Sequoia sempervirens* is one of the most consummately beautiful of trees. Its beauty is as rare and undefinable as the blue on the mountains in the hour of twilight, as startling and lovely as a flower-clad April, as charming and delightful as the notes of a melody that the winds bear away. And yet beauty is its least perfection. All the cheerful gayety, the contented peacefulness, the warm companionship that are the chief glory of other trees, the Redwood, too, possesses. It is one of the most lovable and friendly of trees. But there is nothing rough or common about it, nothing coarse or voluptuous. To know it is to know something that is genuine. To admire it is to be unable to look upon it with the cold eye of a judge, but with the reverence of a worshipper and the veneration of a child.

The *Sequoia gigantea* is formidable and sombre in aspect and very often terrible to look upon. Impassive, unapproachable, uncommunicative, it is the very autocrat of the forest. Godlike in physiognomy, at times it is impossible to under-

THE GIANT SEQUOIA

stand. It has a loftiness of port, a dignity of bearing, a sublimity of energy that command attention and win their way insensibly into the soul. Its nature is as hard and flinty as the granite of the mountainside. But in spite of all this highmightiness there is something forlorn and pathetic, something sad and benign about it. All who know the pathos in memories of days that are accomplished and faces that have vanished will realize how replete this tree is with sadness and tenderness. Grand though it is in the religious solemnity and silence that rest upon it there is something pathetic about its very loneliness that resembles sadness as mist resembles the rain. Assuredly, if the *Sequoia sempervirens* is the most lively and cheerful of trees, the *Sequoia gigantea* is the saddest and the grandest.

If the Redwood be considered Grecian in its glory, the Giant Sequoia is Roman in its grandeur. Both produce forests of giants. In one beauty and grace held splendid court; in the other greatness and magnificence. The one is Grecian in its idealism, so divine in its loftiness as to exert an elevating and ennobling influence, and so fine in its perfection of form as to epitomize this immortal quality of Athenian genius; the other is Roman in its invincible strength, so imposing in its stolidity and massiveness as to embarrass its beholders, and so baffling in its superiority as to thrill them with awe and fill them with wonder. One is an emblem of eternal youth, ever sprouting

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Phoenix-like from its ruins and pressing with youthful vigor upon the faltering footsteps of its mouldering sires, exempt, like the immortal influence of Greece, from mutability and decay; the other is an emblem of permanence, a form of endurance standing among the temporary shapes of time, a structure not unlike a Roman pile, built to withstand the onslaught of the ages.

Today both species of *Sequoia* are confined to the mountains of California. They inhabit the western slopes of its two systems of mountains, the Coast Range on the West and the Sierra Nevada on the East. The former parallels the ocean; the latter forms the backbone of the State. Enclosed between these mountain chains lies the great valley of California—a vast, oval plain, scarred all over with grain fields and orchards, and mottled with shadows from the drifting sky squadrons—with its two central rivers, the Sacramento and the San Joaquin, meeting in its center and flowing with tranquil deliberation through a series of bays, on through the Golden Gate to the Pacific.

In comparison with the vast distribution of the genus during Miocene times these two surviving species now occupy a mere fragment of territory. The Redwood is restricted solely to the coastal mountains; the Big Tree obtains only in the Sierras. Together, by reason of the lofty height of the coast species and the gigantic girth of the Sierra species, they comprise a group of

THE GIANT SEQUOIA

conifers unrivaled the world over. Since they are found nowhere else, California rightfully merits John Muir's claim of being the "Paradise of Conifers."

The *Sequoia sempervirens* forms a tolerably uninterrupted belt along the seaward side of the Coast Range. This belt is approximately 450 miles long and extends from just beyond the northern California border-line, where it fades out noticeably, south to the bay of Monterey. The maximum width of the Redwood belt is thirty miles and reaches from nearly sea level to an altitude of 3,000 feet. In the vicinity of Crescent City the Redwood approaches the ocean so closely that its tiny cones scatter their minute seeds about the cliffs upon which the wild waves of the Pacific beat. In the hot interior valleys that lie parched and shimmering under summer suns—valleys that are moistened only occasionally by winter rains, conditions are apparently too unfavorable to permit of its growth, and the tree is absent. It thrives only where the fog-laden atmosphere hovers about its crown. Its feathery arms seem to drink in these hazy, lazy mists as if by magic and to precipitate them into gentle showers. Along the river flats frequented by sea fogs, where the soil and environment are ideal, it attains its greatest development. Indeed, on the bottom lands of the Smith River and the main fork of the Eel in Humboldt and Del Norte Counties, the Redwood "completely monopolizes

THE GLORY OF THE MOUNTAINS OF CALIFORNIA

the soil and forms virgin forests of the heaviest stands of timber in the world." "Stands," according to Jepson in his monumental *Silva of California*, "of 125 to 150 thousand feet, board measure, to the acre are not uncommon. Instances of even two and one-half million board feet to the acre are on record, while 480 thousand feet, not including waste, have been taken out of a single tree." When it is realized that good eastern forests produce but ten thousand board feet to the acre, this statement is striking. In fact, such an immense yield separates the Redwood from all the timber trees of the globe.

The *Sequoia gigantea* is more limited in its range than its fog-loving cousin. Its belt is but 250 miles long and extends from the middle of the American River, near Lake Tahoe, to Deer Creek in Tulare County. It is found in the verdant center of the coniferous belt along the middle heights of the Sierra. This zone of finest vegetation is located between the altitudes of 4,600 to 8,000 feet above the sea where the environment insures the most nearly perfect conditions for tree life; where heat is tempered by elevation and the cold of winter is modified by the proximity of a great sunlit valley. The area covered by the Big Tree, however, fails to equal a hundredth part of that which the Redwood occupies. This is due to the fact that the Giant Sequoia does not occur in an uninterrupted belt. Unlike the Redwood, generally speaking, it congregates in groves.

THE GIANT SEQUOIA

Single trees are rarely found alone in solitary grandeur. Preferring the society of its fellows, the Big Tree is almost always found in "family clusters." Though mingling with Sugar and Yellow Pine, with White Fir and Incense Cedar, these Sequoian groves never lose their identity. The size of the individual Sequoias and their concentration within a definite area are sufficient to set them conspicuously apart from the general forest.

Twenty-six of these scattered patches of forest giants sociably growing with trees of shorter pedigree and lesser dignity have been enumerated by Jepson. These groves logically form a northern and a southern group, with the Kings River as the line of division. The northern portion of the Giant Sequoia belt has so diminished in size that it consists of but seven small groves so widely separated that three of the gaps between them are from thirty to forty miles in width. The northernmost group must be called a "grove" by courtesy, since it contains but six trees half of which are less than three feet in diameter. The southernmost, with the exception of the Fresno Grove, is the most remarkable of the northern group. This is the famous Mariposa Grove. In all these northern patches, the Sequoia is an epicure of climate and site. It grows only in locally favored or protected spots where the sunshine is abundant and the soil rich, deep, and moist.

THE GLORY OF THE MOUNTAINS OF CALIFORNIA

The southern groves mark an almost continuous line through the majestic, trackless forests of pine and fir from the Kings River southward to Deer Creek. The gaps in the belt gradually become increasingly narrow, and then cease altogether. The Sequoia may be said to extend across the wide basin of the Kaweah and Tule Rivers in noble forests broken only by deep, yawning canyons with rivers threading their sinuous way down the center of each. Here, too, the belt widens out, extending from the granite promontories overlooking the fading line of tawny foothills to within sight of the summit peaks—regions of rock and ice lifted above the limit of life. The largest and most famous of these forests is the Giant Forest located near the mouth of the Marble Fork of the Kaweah River and within the confines of the Sequoia National Park. This most wonderful of all American forests was named by John Muir, who must have wept for joy when he stumbled upon it. Thousands of trees are congregated in this forest, five thousand of which are said to be veritable titans in size. It possesses, also, the largest tree in the world, the General Sherman, which has a diameter of 36.5 feet and a height of 280 feet—measurements which easily entitle it to wear the purple of the King of all trees.

In this glorious forest the Sequoia is indifferent alike to exposure and soil, and is found growing in profusion on slopes of every character, some

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even clinging to life on bare granite surfaces in a way wonderful to behold. Multitudes of tender seedlings are continually springing up in moist, sunny openings to carry on the royal line, and companies of slender saplings are eagerly crowding up every slope deserted by their elders, crowning all save the highest eminences. In fact, the marvelous bounty of Nature has produced here the finest assemblage of conifers known to botanical science. The entire region is a billowy sea of evergreens, sinking and rising with the undulations of the land with an unfailing luxuriance, the great rounded domes of the giants swelling above the verdant canopy of pines and firs to mark where the Sequoias sweep along the ridges, rise out of deep canyons, or encamp on sunny meadows in conclave grand and solemn.

PART TWO

Giant Sequoias *of the*
Mariposa Grove

CHAPTER III

GALEN CLARK

THE Giant Sequoia must have afforded pride and pleasure to the Creator for it is the finest tree He ever made. Of a truth, there is not in all the world a tree more wonderful.

And yet, man has flouted this "shade of His perfection." Under its shadow he has neglected to gain inspiration and strength. In the restless trend of the times he has become engrossed in empty pleasures. In the agitation and strife for wealth individual interests, and not those of posterity, have become of moment. As a result only that which offers the allurements of gain has been recognized in the great Sequoia. Its solemn and stately forests have been invaded by the axe and commercialism has turned reverence, not into beams and pillars for places of worship, but into supports for grape vines and barbed wire.

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Fortunately, the Mariposa Grove has escaped the fate which the axe has brought many of its brethren. Like the groves of yore that were God's first temples it still stands, a virgin forest. The fluted columns of its mighty trees are softened by the touch of centuries, and so harmoniously are these venerable columns disposed that splendid colonades are formed, giving the effect of a vast, many-pillared hall. The airy masses of foliage that these great trunks mingle high in the heavens form cathedral-like archways of the finest forest ceilings imaginable. These magnificent interlaced archways soften the glare of day and impart a dim religious light which suffuse shifting mosaics of light and shade over the forest floor. Even the thick layers of crumbling bark and the dessicated dust of ages serve to deaden the footfall of the wanderer and to invest the gloom with a profound silence. A deep Sabbath-like calm broods in the very air. Indeed, all seems eloquent of worship. Here Nature stands with arms uplifted.

None escape the sacred influence of such a grove. None, save possibly the white man. Deer with eyes of soft innocence trip timorously through it; burly brown bear never shuffle heedlessly down its winding aisles; and rarely does the noisy, impudent jay muster sufficient courage to disturb its serenity. The Indian with his stone axe never harmed it, nor has the myth that he lighted his fires against its trunks, thus "wantonly destroying that which he was too rude to rever-

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ence," been substantiated. It is only civilized man who violates such a sanctuary "just so long," as John Muir so pithily expressed it, "as fun or a dollar can be gotten out of them."

Truly, the ways of man are at times past understanding. Under roofs that his frail hands have raised he worships, yet he destroys with utter disregard a Sequoian grove—a temple not made with human hands. Such acts may be damaging. They may even be bad. But they are manifestations of human nature—of the clay as it came from the hands of the Potter. Happily, there are those among men who are of more than common clay. Such a man was Galen Clark. It was he who first made known to the world the Mariposa Grove and who faithfully guarded it for well nigh a quarter of a century. He, above all others, rendered it the most completely free from the axe and preserved it in the condition in which his eyes first beheld it. Lest man forget, he saved it as a place of play and prayer.

Galen Clark came to California in the days of the gold boom. Strictly speaking, he was not of the Argonauts of '49, since he was not seized by the spell of the gold fever until 1853. Shaking the dust of New York from his feet in October of that year, he joined the eager multitudes who flocked toward the new El Dorado. The year 1854 found him in the country of Mariposa taking part in the pick and shovel storm that was then raging on its mountains. Not unlike the majority,

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he failed to find "a chartless river running on fabled sands of gold." The chase of the fabulous ended; he took up the less fascinating but more substantial occupation of a surveyor. Occasionally, however, the gold lure again possessed him and he spasmodically returned to mining with the flare-up of local bonanzas. It was while so engaged that he contracted, through exposure and hardships that had already filled the nooks of the gold region with the bones of strong men, a disease of the lungs. The physicians, unable to lessen the great number of hemorrhages, prophesied that he had not long to live. Now a member of the dreary brotherhood of failures, health and strength gone, and knowing that death would claim him soon, he did not become a dissolute miner. Instead of finding a refuge in strong drink, he sought solace through communion with the sweet wonders of the common earth and sky. In truth, he went home to Mother Nature, and became a wanderer finding peace on mountain tops and consolation in piney woods.

Singularly enough, his lungs healed. The climate had accomplished the miracle. The bland and salubrious air rendered pungent by the balsamic odor of Sierran forests, together with an abundance of health-giving exercise, had cured the disease. More strange still, Galen Clark attained the venerable age of ninety-six. Though he continued to lead the life of a mountaineer, and constantly to expose his person to calm and

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storm alike, he never suffered a recurrence of the malady.

It was during one of his mountain rambles that Galen Clark came upon the Mariposa Grove in May of 1857. Having toiled up the slope of a divide with the South Fork of the Merced flashing in its ravine far below, he paused at the summit for rest. Upon gazing around, to his amazement he was greeted by an immense tree. He immediately recognized it as of the same variety and genus as the mammoth trees of Calaveras which had so astounded the world subsequent to their discovery in 1852, and which were, supposedly, the only trees of their kind in existence. A cairn today marks the spot where Galen Clark caught his first glimpse of the Sequoia, and this first majestic shaft upon which his eyes rested in wonderment bears his name carved on a slab of granite hardly more enduring than the tree itself.

Though not alone in this discovery, it is quite certain that Galen Clark was the first white man to thoroughly explore the Mariposa Grove and to make it known to the public. According to his own testimony he was accompanied by one Milton Mann. "A few days later I was in the lower portion of the Grove," writes the discoverer in Foley's *Guide Book*, "and since the Grove was situated in Mariposa County, I named it the Mariposa Grove of Big Trees." It is not certain, on the other hand, that Galen

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Clark and his companion were the first white men to walk through the Mariposa Grove. The dauntless prospector, undoubtedly, had also traversed this region. In his search for the imprisoned metal that seemed to cry out to him for liberation all of this hitherto unbroken solitude had become familiar ground to his feet. But if any gold-seekers beheld the Mariposa giants earlier than 1857, the discovery died with them.

It is sometimes claimed that one R. Hogg, a hunter employed by a water company to keep its camp supplied with venison and bear meat, discovered the Mariposa Grove in 1855. While in the pursuit of his calling, he came upon three trees of a different nature from any others in the forest. This he reported to Galen Clark and other acquaintances. Later, in the summer of 1857, and following the discovery of the Mariposa Grove, Galen Clark came upon the three trees reported by Hogg in a gulch about one-half mile southeast of the Big Tree grove. The largest of these stragglers, to which Hogg accredited a circumference of more than ninety feet, was so badly burned by a forest fire in 1864 that it was afterwards blown down during a storm. The other two eventually fell victims to the axe.

In April of his forty-third year (1857) Galen Clark settled on the South Fork of the Merced. He had visited Yosemite in 1855. Therefore, it was not without foresight that he staked out his claim beside the trail running from Mariposa

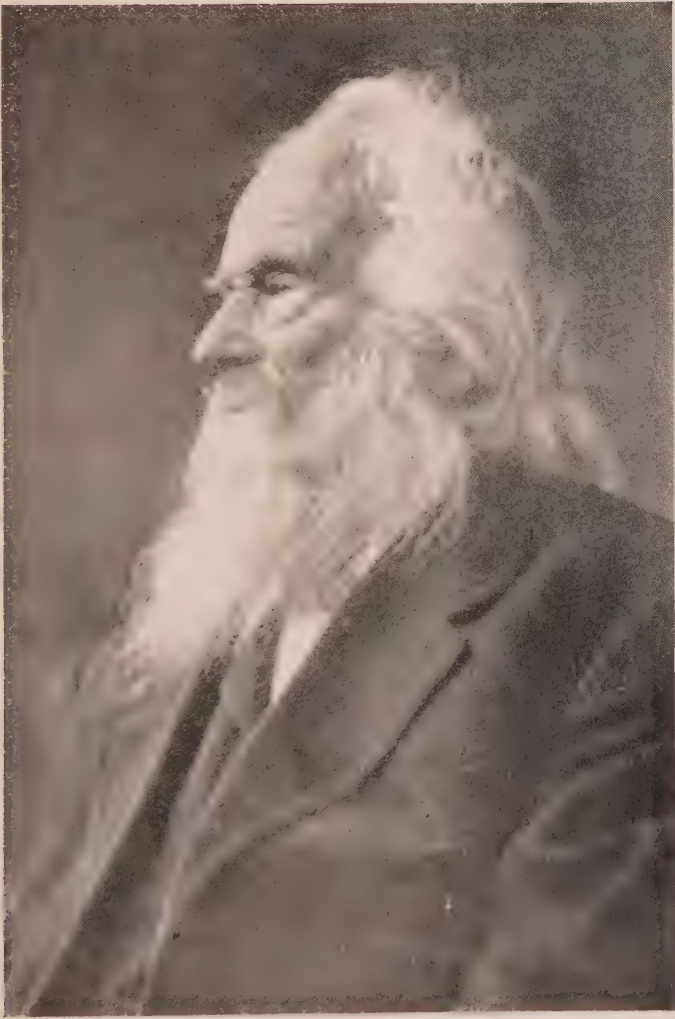


Photo by A. C. Pillsbury

GALEN CLARK AT THE AGE OF NINETY-SIX

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to Yosemite in the year that the Mann brothers completed it. He selected a spot near the lovely expanse of the Wawona meadow which lies in a basin-like depression encircled by rolling mountains clad in forests of sugar pine that are no more. He built a crude log cabin, thus making the beginning of the white man's Wawona.

It was not long before his visions of a teeming traffic that would some day wend its steady way before his door en route to the Yosemite became a reality. At first small straggling parties came at lengthy intervals, then larger groups, and finally a steady stream of eager travelers who desired to see the glories of Yosemite began to pass his way. His establishment, too, kept pace with the increasing travel. It varied from canvas and log to tolerably pretentious buildings as the seasons went by. With the advent of the sixties it was known as Clark's Station, and was the heart of activity in this backwoods country. By this time a trail connected Clark's with the Mariposa Grove. So impressed had the discoverer become with the importance of his find that he had built a good horse trail of four miles in length, thereby making the wonder trees of the Mariposa Grove more accessible to the world.

A trip to the Yosemite in these early days involved much of hardship without reward; much heat and dust and fatigue in the hope of enjoyment. A ninety-two mile stage ride was necessary before reaching Mariposa and an additional sixty

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miles on horseback. The first night of the horseback journey usually found the traveler at Clark's, the second amid the solemn immensity of Yosemite's granite cliff and domes at Black's, the first structure in the Valley pretentious enough to be styled a hotel. Real enjoyment did not come until Clark's was reached. Here the traveler had arrived at the outer edge of the civilized world and an atmosphere of romance surrounded the rest of the way. Europeans and New Yorkers were prone to class the trip in the same category as an expedition to little-known Tibet, and the friends of those who were determined on making it urged that such adventurers, before they left draw up their last wills and testaments. Nor is it to be wondered at that tourists returning from Yosemite after such a journey should speak vaguely of "obstacles and difficulties overcome and represent themselves as having a kind of undefinable claim to the character of heroes."

Everyone who passed over the Mariposa trail carried away a pleasant memory of Galen Clark's quaint wayside inn and long remembered its proprietor. The generous hospitality that he extended never failed to win the admiration of his guests. Even celebrities from abroad paid him tribute whenever they chanced to speak of him in later years, and always remarked that he had made them feel at home beneath his roof. The poor as well as the rich held him in esteem. No weary wanderer, no matter how low his fortune

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or how humble his pack, was ever turned away hungry or unrested. All were equally welcome, for he shared his loaf with Indian and white alike. Indeed, the natives in the country around loved him for his kind and gracious ways, sought his advice in council, and called him "Father Clark."

The early guide books that tell of these incipient days of pilgrimages to the Yosemite rarely neglect to remark about the evenings spent about the open campfire of this simple, upright, kindly man. They tell how he presided over the social converse of the evening, how he narrated many a mirth-provoking anecdote, freely exchanging wit and wisdom, and all the while never indulging in boisterous laughter. They allude to those trifles which memory often cherishes—"the slight intonations of his voice indicating that something mildly sarcastic or funny was coming." Lastly, they usually conclude with a picture of the great sugar pines, one hundred and fifty and two hundred feet high, solemnly standing guard, the files of their fellows extending back into the mystic blackness of the forest, the foremost calmly looking on the happy scene, their shadowy clusters of needles brightening and glowing in the flickering firelight.

Yet these noble qualities which Nature had planted in his being with such munificence unfitted Galen Clark as an inn-keeper. Business was too foreign to his temperament, and he was too utterly self-forgetful to win success. His friends

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multiplied fearfully and wonderfully, but fortune was unkind to him and led him into debt. So low had his estate fallen by 1869, when the Mariposa County survey was made, that he deeded half his Wawona property to one Edwin Moore. A few years later he borrowed money with which to make extensive improvements. These proved so unfortunately planned that foreclosure resulted. Again Galen Clark faced the most discouraging ordeal that can come to man—the making of a new start in life.

Until the late seventies the Mariposa Grove was accessible only by foot or horse. The beginning of the seventies witnessed the completion of the Mariposa road to Clark's. In 1874 Washburn, Coffman, Chapman and Company were granted permission to extend the Mariposa road to Yosemite, with the privilege of collecting a moderate toll as compensation for its construction. This road, which is now known as the Wawona Road, reached the Valley in July of 1875. Its completion was celebrated in Mariposa in the true holiday manner of the early Californian. Bands and bluster and bunting were the order of the day. One prominent citizen of the community delivered a flowery oration and with an air of great electrical effulgence heralded the event as the dawn of a new era. Indeed, returning travelers from Yosemite could no longer lay claim to the laurels of heroes, for the journey was now considerably shorn of its "terrors."

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During the spring of '78 or '79 the present road from Wawona to and through the Big Trees was built. The opening through the Wawona Tree in the Grove was made in one of these years and vehicles began to carry the curious of the world through this living tree. Clark's Station was purchased by the Washburn Company in May of 1875, and with the advent of the eighties the present-day Wawona had seen its birth. Clark's had become but a memory.

Contrary to popular opinion, the quaint Log Cabin which is so redolent with the breath of the fifties was not built shortly after the discovery of the Mariposa Grove. It was built much later, too late, in fact, to pose as "Galen's Hospice" or to satisfy the lovely legend that it sheltered from the stormy blast wanderers who found themselves far from civilized habitation or human succor. Sentiment would fain preserve this myth. However, truth is firm and in all honor it must be stated that this cabin was not erected until 1885, and that it has never given shelter save to curios and their merchants. The report of the "Commissioners to manage the Yosemite Valley and the Mariposa Grove of Big Trees" of 1886 forever proves how palpably against the weight of authority this tale is. "Last year," the report states, "a comfortable and artistic log cabin was erected at a central point in the Grove . . . and ornamented by a shapely, massive chimney with

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a cavernous fireplace guarded by the traditional crane and pendant kettle."

The first curio dealer to occupy the Log Cabin was "Old Cunningham." This quaint character made his curios in a hollow tree with the aid of a jig-saw and tourists prized his wares the more knowing that they were made on the spot. When his purse was fat "Old Cunningham" would ride to Wawona to a saloon called the "Snow Plant," where he was wont to present the bottle and spin yarns. Hutchings left posterity a delightful penciling of this old fellow. "The coach generally halts at a large and deliciously cool spring near the Cabin, where those who have come to spend the day will probably take lunch. Here, too, we shall have the pleasure of meeting Mr. S. M. Cunningham, who knows every tree by heart, its history, size, and name, and can tell you more about them in ten minutes than any man could in an hour (as is the usual case with such wags). I can see his bright and genial look, watch his wiry form and supple movements while I write. There is one thing especially noticeable about Mr. Cunningham—he is never discouraged and sees always the bright side of things, so that when a storm is swaying the tops of the trees until they bend together, he can listen interestedly and tell you laughable incidents until your sides ache."

With the waning of the gold excitement and the waxing of a stable Statehood, those who were

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laying the foundations of the State began to turn their faces toward the future. Gradually they came to see the need of treasuring some of its natural heritages. They recognized the fact that California had been lavishly favored with great natural wonders. Nevertheless, they came to realize also that she was not so rich in these as to be careless or neglectful of their preservation. They likewise perceived, these far-seeing ones, that although California possessed all of the Giant Sequoias, they were the most perishable of all her treasures if left without protection. Destructive humanity can little change the sublime granite forms of Yosemite. They will always remain unspoiled, and mankind can hardly mar them more than could the clouds that hover about their summits or the butterflies that flit about their bases. It is true that man may plow Yosemite's meadows and cut down wildflower gardens that have never known a mower. He can destroy its clusters of trees, rob Mirror Lake of its reflective charm, stop the flow of its waterfalls. All this he can do. But however much he tries he can but little alter or disturb the majestic repose of its rocks. Yet he can lay low in a single day a Sequoia that waved its arms to Sierran winds when the Carpenter of Nazareth was born. In one short season he can reduce a hallowed Sequoian grove to an expanse of blackened stubble where only charred stumps remain to mark where trees once stood and "looked at God all day."

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Fortunately, however, these builders of a commonwealth saw the light in time. Nor did they wink at it. Hence, the Mariposa Grove came to be made safe from the axe through seasonable legislation and was spared the fate that soon befell other Sequoian groves at the hands of greed and commercialism.

Fortunately, again, Galen Clark was appointed Guardian of the Mariposa Grove by the Governor. The choice was well and wisely made. In fact, when John Muir said, "Galen Clark is the sincerest tree lover I ever knew," he spoke with fine truth and spirit. Never will Yosemite look again upon the likeness of such a man. In the performance of his duties as guardian of the Yosemite Grant he was not found wanting and proved himself sterling by every standard incident to human nature.

In 1864 when kinsmen in their bitterness and hatred were destroying one another, Senator Conness in behalf of certain influential citizens of California introduced a bill into Congress and the law-makers of Washington paused for a moment in the prosecution of the Civil War to pass the Act which granted to the State that "cleft or gorge in the Granite Peak of the Sierra Nevada Mountains . . . known as the Yosemite Valley with its branches and spurs, in estimated length fifteen miles and in average width one mile back from the main edge of the precipice on each side of the valley . . . and the tracts embracing what is



MARIPOSA GROVE

Photo by H. S. Hoyt

GALEN CLARK TREE

Rock cairn to left marks spot of discovery

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known as the 'Mariposa Big Tree Grove,' not to exceed four square miles. . . ." In addition to this the Act stipulated: "the said State shall accept this Grant upon the express conditions that the premises shall be held for public use, resort, and recreation and shall be inalienable for all time." President Lincoln approved the Act a few days before he made his famous speech on the field of the battle that broke the Southern blade. Shortly after this Governor Low of California formally issued a proclamation accepting the Grant. In it he warned all persons against willful and malicious trespassing and made it a misdemeanor to injure or destroy any of its treasures. In accordance with the terms of the Act, the Executive of California then appointed eight Commissioners to manage the Valley and the Big Tree Grove, naming Galen Clark as one of them. On the second of April, 1866, the State Legislature made formal and legal acceptance of the Grant and clothed the Commissioners with the necessary power to make such regulations as were requisite to its administration and control. At this time the Legislature also authorized the Governor to appoint a Guardian to take active charge of the Grove and the Valley. A small appropriation of two thousand dollars was made for the purpose of making improvements during the ensuing two years and an annual salary of five hundred dollars was voted the Guardian.

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Life is not always a picking of flowers; often it is a plowing of meadows strewn with hidden rocks. The latter proved to be the lot of the Commissioners in connection with the Yosemite, for their progress was blocked by the hostility of settlers who refused to relinquish their claims. Litigation resulted and the Commissioners encountered only censure and antagonism in their attempts to make of the Yosemite a playground for the people. Happily, they were not so handicapped in their management of the Big Tree Grove, yet here, too, they had difficulties to contend with.

Chiefly among these was the problem of human vandalism. Constant vigilance was necessary to guard against those who seemed to take an insatiable delight in destroying all within their reach. Truly, the besetting sin of all "pilgrims" the world over is their unquenchable lust for "specimens." Like priests of the Capuchin Convent who "unfailingly show some memento of a saint—a bone of his body, a thread of his garment, a lock of his hair, or a drop of his blood—before they extol his miracles," the "pilgrims" who journey to Nature's shrines must, at all hazard, carry away some bit of the shrine to awaken the wonder of the rustics at home. Or, if they are thwarted in this, it becomes imperative for them to inscribe their poor little names in some convenient place on the shrine so that all who run may read. What a pity some

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justly wrathful Sequoia cannot fall on some of these defamers and crush their "eyeballs into dust," thereby intimidating them and their kind into forever desisting from such acts.

The Commissioners were plagued with vandals of yet another sort—the camper and the sheep-herder; the one starting forest fires through negligence, the other purposely to insure better grass for his "hoofed locusts." In 1889 the Grove was threatened with disaster. A fire, started because of a camper's carelessness or through the deliberate design of sheep-herders, secured sovereign possession of the surrounding forest and in one place invaded the Grove itself. In a few days the entire annual appropriation was used in saving the Grove from the angry flames. When their fury was finally conquered, black scars that only time could obliterate remained. It was this memorable fire that consumed the Lone Giant, the largest decumbent monarch in the Grove.

Since the Commissioners had no control over outside forests bordering on the Grove, this calamity indicated the need of building a fire-line to arrest the progress of future conflagrations. The necessity of clearing the Grove of its dense masses of inflammable undergrowth was also made apparent. This growth not only obstructed a view of the older trees, but it rendered them inaccessible for close inspection. It also made for poor reproduction by depriving seedlings of light. It choked and starved the younger trees, while

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it robbed the patriarchs of their much needed moisture and hindered their growth. Hence, to render these harmful features negligible, the Commissioners decided to clear the Grove of its underbrush. The appropriations of the next five years were used toward this end. By 1895, all the acreage within the ambit of the Big Tree Grant had been treated to the brush scythe and the grubbing hoe, and the fire menace reduced to a minimum.

No less worthy of attention are the extensive additions and improvements made during these years upon the roads. Each of the main clusters of Sequoias was rendered accessible and travelers could make a complete tour of the Grove viewing its principal wonder trees from the stage, as they do today. The State had received the Grant approachable only by trail. In an amazingly short time, considering the meagerness of appropriations, the State had rendered the Grove accessible to other than hardy travelers. Young and old, the physically fit and the infirm, could now enter it with comfort and safety. In all fairness it must be conceded that the State had made the Mariposa Grant more suitable for the particular use for which it had been appropriated. The Commissioners had administered the Grove for the good of the greatest number. They had taken positive steps to protect it from the carelessness of the thoughtless and the wantonness

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of the ignorant. Unquestionably, they had proved scrupulously careful in their administration of the trust imposed in them.

Yet even so commendable an accomplishment as this only aroused a storm of criticism. The removal of the fire-inviting underbrush shocked the nerves of sentimentalists who advocated the preservation of the Mariposa Grove "in the condition in which it won the admiration of its discoverer and appealed to the enthusiasm of the world." They lamented over the fancied catastrophe. They fell into near convulsions over the thought that the virginal beauty of the Grove was no more, because its "flowering shrubs" had been grubbed out. Even the *Century Magazine* took up the bodeful cry. Joaquin Miller's statement that he had travelled from Babylon to Jerusalem "without seeing so much as a grasshopper, or a bird, or a blade of grass in a land that was once an Eden" was quoted as a prophecy of the Grove's condition in the near future if these "destructive tendencies" continued. Alexander, they pointed out, mourned because Greek ivy would not grow on the tower of Babel and inferred that such would be California's lot when her eyesight sufficiently improved to see the need of enhancing the grandeur of her Sequoias by garlands. And all the while they failed to see the irony of their plea. They did not know that sentiment, like ivy, can cling to a very flat surface.

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Nor is this all that the Commissioners accomplished. To their list of achievements must be added yet another. In order to make the Grant of 1864 a treasure that "all shall share and none shall be the poorer for sharing," they warred against unscrupulous commercial enterprises. Hawkers continually pressed forward their schemes in honeyed words to make travelers the victims of innumerable petty charges and vexations. However, the Commissioners who were all men of high principles would have none of them. Concessioners who proved unprincipled in their treatment of tourists were summarily deprived of the means with which to accrue further ill-gotten gains. In all truthfulness it can be stated that throughout the entire forty years of State control* the various Commissioners never sullied their hands in graft. Though they received not a penny in salary and often laid out considerable sums to swell the meager appropriations of the State Legislature, their office was never used for the purpose of gain. In short, they carried a trusteeship that concerned the high honor of the Commonwealth of California in a manner which justifies the pride of the people.

In all this glorious work Galen Clark, as Guardian, stands head and shoulders above his colleagues. He had that desire to serve without

*The Grant of 1864 was ceded back to the Nation in 1906 and became incorporated in Yosemite National Park, which was created sixteen years earlier.

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its selfish qualities. Not inspired by the love of fame and reputation, he did not toil for self-aggrandizement, like many men. He considered the interest of the people higher and purer than that of the individual. It was this interest that he ever held paramount, that he always best served. To him the highest patriotism was expressed by the man who thought not of honor of self or of individual reward, but who lost himself in the larger and dearer interests of the Commonwealth; who so loved it for its own sake that he was content to be forgotten. In this respect Galen Clark succeeded in a manner so striking that it deserves the name of art, not of artifice. He is practically unknown today. Yet he rendered the people of California, and even of America, a singular service.

"As Guardian he enjoyed a longer contact with the management of the Grant, off and on, than any other single individual. He was reappointed again and again by succeeding Governors as Guardian, and after twenty-four years of service in this capacity, he voluntarily retired, carrying with him the respect and admiration of every member of the Commission, of all the residents of the Valley, and of every visitor who enjoyed the pleasure of his personal acquaintance."

The tribute paid him on his retirement in 1897 by those with whom he was so long officially associated is worthy of full quotation:

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WHEREAS: Galen Clark has for a long number of years been closely identified with Yosemite Valley and has for a considerable portion of that time been its Guardian; and

WHEREAS: He has now, by his own choice and will, relinquished the trust confided in him, and retired into private life; and

WHEREAS: His faithful and eminent services as Guardian, his constant efforts to preserve, protect and enhance the beauties of Yosemite; his dignified, kindly and courteous demeanor to all who have come to see and enjoy its wonders, and his upright and noble life, deserve from us a fitting recognition and memorial; now, therefore, be it

RESOLVED: That the cordial assurance of the appreciation by this Commission of the efforts and labors of GALEN CLARK, as Guardian of Yosemite, in its behalf, be tendered and expressed to him:

That we recognize in him a faithful, efficient and worthy citizen and officer of this Commission, and of the State; that he will be followed into his retirement by the sincerest and best wishes of this Commission individually, and as a body, for continued long life and constant happiness.

Galen Clark did great things, but apparently fame accompanied him to the grave. Few know of him today. One of the most kindly of men, he had a simplicity so intense that at times it appeared ridiculous to men of sense and candor. Never offending by superiority, modesty composed the very fabric of his being. To be rather than to appear was the ruling passion of his long life. Having an insuperable aversion for bluster and bombast, he talked about himself rarely, and then only with the greatest of reticence. It was only after much persuasion on the part of friends that

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he was induced to write his charming and authoritative account of the *Indians of Yosemite* in 1904. Doing nothing for the sake of personal display, he never forced himself into the lime-light. Unobtrusive and unpretentious, he had all that unaffected humility that some believe to be the essence of Lincoln's greatness.

No account of Galen Clark would be complete if it failed to touch on his love of Nature. "He was fond of scenery," testifies John Muir, "and once told me that he liked 'nothing in the world better than to climb to the top of a high ridge or mountain and look off.' Oftentimes he would take his rifle, a few pounds of bacon, a little flour and a single blanket and go off hunting, for no other reason than to explore and get acquainted with the most beautiful points of view. On these trips he was always alone and indulged in the tranquil enjoyment of Nature to his heart's content."

Few, indeed, have been more sincere in their love of Nature. He loved not only all her moods, both beauteous and terrible, but all her forms from the lowliest flower in the dust by the roadside to the loftiest of Yosemite's cloud-caressed cliffs. But he lacked the power of expressing his affections. Like Muir, he "read the great book spread out before him;" unlike Muir, he was not gifted with a magic pen. Probably he was too sensitive to his poverty of language to attempt to describe the fairy-like beauty, the rare delicacy,

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and the wondrous tints of an Alpine blossom—"that beautiful creature that catches the smile of God from out the sky and preserves it."

Twenty summers in the Yosemite formed in Galen Clark an attachment for the Valley that was deep and lasting. Nearing the sunset of his life, like the patriarchs of old, he dug his own grave in the little cemetery near Yosemite Falls. With his hands he hewed his own tombstone from one of the granite blocks the elements had plucked from the cliff over which the snowy flood of the grand Yosemite Falls descend sonorous, and soft, and slow. Taking up a few seedling Sequoias from the Mariposa Grove, he transplanted them at the four corners of his last resting place so that they would shade the grave of their blessed benefactor in the years to come. A man of great age, he must have brooded on death and become familiar with its mystery so that the end did not come as a surprise.

One day in 1910, at the age of ninety-six, the end came and in sorrow and in silence all that was mortal of Galen Clark was laid in the sacred earth, his kindly soul passing on to where, beyond the booming voice of the great fall he so loved, there is peace.

CHAPTER IV

WONDER TREES

THE Mariposa Grove belongs in the category of the world's impressive wonders. It presents the most remarkable exhibition of the Sequoias growing between the American and the Kings Rivers and displays Nature's finest handiwork on the fraternity of the king of all trees. It contains the essence of the most imposing qualities of the Sequoia and is unlike any other grove in its very compactness. Concentrated in its small extent are trees in every phase of development from nurseries of tender seedlings obtaining their feeble hold on life and groups of graceful saplings not half arrived at the maturity of treehood, and just disclosing their impatience to be kings, to venerable patriarchs that are numbered foremost in the world of living things—giants so freighted with age that they exemplify Doctor Johnson's famous metaphor, "and panting Time toiled after him in vain."

The Mariposa Grove is superior to other Sequoian tracts in its accessibility, lying as it does in a shallow, crater-like depression near the top of a forested ridge at an elevation of 6,000 feet above the sea and a distance of sixteen miles as the crow flies from the Village in Yosemite Valley. This ridge, upon which the Grove is

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situated, runs in an easterly direction between Big Creek and the South Fork of the Merced, having as its culmination Mt. Raymond, a rocky promontory upon which the snow lingers even in July.

The Grove is approachable over the Wawona Road which winds upward along the south rim of Yosemite Valley. After passing southward in a meandering course through twenty-seven miles of Park forest, the road drops to Wawona from where it again ascends 1,500 feet within eight miles before reaching the portals of the Mariposa Grove. Once within the Grove, but a comparatively brief period of time is required in which to review its salient features. With little effort it may be completely explored and studied. So harmoniously are its wonder trees disposed within the utmost smallest space that all of them may be viewed from a passing vehicle. In fact, even the most cursory journey through the Mariposa Grove will suffice to give an impression of the singular, solemn dignity of the Sequoia.

Possibly much of the world-wide fame of this Grove is due to the fact that it has been brought the nearest to civilization of the several Big Tree groves. Yet interest in it should not spring merely from such a consideration, for it lies in happy proximity to the grandeur of Yosemite's cliffs and domes. Indeed, it is as distinctive a feature of Yosemite National Park as the Valley itself. Time was when the importance of the Mariposa

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Grove was little if at all recognized. In the last decades of the nineteenth century the Calaveras Grove held the center of the stage. The latter was then the most accessible. Because of this it became the Mecca of naturalists and celebrities of the day who made pilgrimages across the continent in order to visit it. Therefore, the Calaveras giants loom large in the earlier literature of the Sequoia. But with the passing of the stagecoach and the hitching post—with the coming of the "winged wheels" and the "iron horse," the Mariposa Grove ceased to bloom unseen. Instead of the Calaveras Grove it became the more easily reached. Inevitably the pendulum of popularity swung toward it and yearly the tide of travel that flows its way increases.

The tendency to wander into the wilderness that obtains in these feverish times is advancing the popularity of the Mariposa Grove. Mankind is coming more and more into sympathetic contact with Nature. Yearly thousands of over-civilized people are discovering that nothing so renews the health of the body, so refines the mind, so affords a margin of leisure for the soul, or so has the power to quiet the "restless pulse of care" as communion with Nature. They are discovering that real recreation and enjoyment are not found in crowded cities or fashion-hampered hotels. As a result, unspoiled woods and mountain solitudes, brawling brooks and soundless lakes, flowers and stars, rosy dawns,

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sunset golds and twilight purples are fast becoming the wealth of nations. All this is glorious and full of promise. It lends a happy tone to the times. Truly, if it persists in increasing, the Mariposa Grove is destined to enjoy a tremendous tomorrow.

The Grant made by Congress in 1864 really embraced two distinct groups of the Giant Sequoia. Because these approach within but a few yards of each other, they have come to be looked upon as a single body. The Upper Grove, according to Whitney, contains 365 trees of a diameter of one foot and over. This makes, as the old guide books were wont to point out, "a tree for every day in the year." The Lower Grove is smaller in area and contains but 182 trees, which are more scattered than those of the Upper Grove. In both groves there are hardly more than 125 Sequoias over 40 feet in circumference, yet these in themselves are so imposing that to view them is compensation for a journey half the circuit of the globe.

The road enters the Lower Grove, describing a figure eight in passing through it and the Upper Grove. The Sergeant of the Guard and the Four Sentinels guard the gateway. Their bright color and port, rather than their size, at once attract the eye. Soon other monarchs, among them the prostrate Father of the Forest, are passed. Then the Grizzly Giant, standing alone in the grandeur

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of its own solitude, chains the attention. Upward wanders the road, passing from one marvel to another. Each seems to surpass its predecessor, and finally, when the road passes through the Wawona Tree, it seems the chief wonder of them all. But when this Highway of the Giants winds back again to the Log Cabin, the traveller learns that the real wonder has been reserved for the last. Here he will find himself in the midst of a most magnificent grouping of Sequoias. Over half a hundred are within sight of the Cabin. But not until, after examining one after another, letting the eye roam over their fluted columns and upward into the blue-green depths of their far-away tops, walking around some and into the enormous hollows of others, climbing up the sides of still other prostrate trunks and stepping them off from end to end, will a proper realization of the immensity of the Sequoia be possible.

The more remarkable trees of the Mariposa Grove have received names to individualize them. But even this practice of late has been carried too far. The names of states, cities, and persons have been indiscriminately tacked to trees that were on earth when the stones of Rome were laid. That such comparatively trivial and frivolous designations so inconsistent with the grandeur and nobility of the Sequoia should be permitted is amazing and regrettable. It detracts seriously from the finer appreciation of the tree and renders its groves "freak museums" which are looked

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upon with a "Barnum eye" as merely "side-show curiosities and big things." Assuredly, such a practice is to be unreservedly condemned.

Whitney attempted to avoid just such a result as this by distinguishing the greater Sequoias by numerals. However, the undesirability of such a method is at once apparent when pressed into service. Such featureless monotony as "Number 15, fine, sound tree; Number 304, largest and oldest tree in the Grove; Number 262, half-burned at the base," and the like (as Whitney recites in his *Yosemite Guide Book*) is produced. Obviously, the trees must be individualized by names. But why attach a name such as Andy Johnson to a tree that saw the light of day when Pompeii was destroyed? Affixing names of such temporary notable figures of the day to a Sequoia savors almost of ticketing the name for an "adventitious immortality." At any rate, whether it be the tree or the man so honored, probably either would live as long in memory without the connection. If a Sequoia must be labeled, let some striking attribute of the tree itself be the governing factor in selecting the designation.

Foremost of the Sequoias in the Mariposa Grove is the Grizzly Giant. It is among the most massive-stemmed trees of the world and ranks with the oldest inhabitants of the earth. Yet a mere statement of its size little serves to convey an adequate impression of the tree. Measurements are, after all, only relative criteria, at best. As



MARIPOSA GROVE

Photo by H. S. Hoyt

THE CABIN AND ITS MAGNIFICENT SETTING

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well give the tailor's measurements of Lincoln as an index of his greatness as to try to convey the fascinating immensity of this tree by saying that it is 204 feet high and 31 feet in diameter at the ground. Its stockiness is truly remarkable. Its sturdy trunk tapers upward so slightly to the first great limb—reputed to be six feet in diameter; the size of a mature pine—that the diametric variance is almost imperceptible. Nor is its base excessively expanded. No more, really, than is necessary for strength. In fact, it seems almost too slight an expansion to serve as a diagonal brace or instep for the support of such a gigantic structure upon the earth. Consequently, the diametric measurement of the Grizzly Giant at the ground justly signifies its enormous bulk. Yet even this cannot be accurately obtained for its base has been so badly gnawed by flames that a true measurement is not possible.

Several Sequoias press closely upon the Grizzly Giant in girth. The Lafayette Tree is easily its counterpart, having a ground diameter of 29.4 feet. But in this case the swell at the base is excessive and the trunk itself has less than two-thirds the diameter of the Grizzly Giant. The Columbia Tree even exceeded the Grizzly Giant in girth and must have measured at least 110 feet in circumference before fire claimed half its base. Viewed from the Cabin it is extremely imposing and almost as grand and picturesque in its old age as the Grizzly Giant. Standing on a steep

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slope, its stem appears to be fully as massive as that of the patriarch of the Grove, while its great elbowed limbs and its high top, "bald with dry antiquity" and scarred with tokens of old wars, vest it with a venerable charm. However, a scramble through the dense brush on the up-hill side reveals a large burnt hollow in which a dozen persons could comfortably stand. If sawed close to the ground its stump would be shaped like a crescent moon. A tape stretched around it and across its concave surface would record a diameter of 25.6 feet. The Washington Tree is a foot less in girth at the ground than the Grizzly Giant, yet measured 10 feet above the ground its trunk is a few inches larger in diameter, being 20.7 feet. Nevertheless, it tapers far more and is not nearly so imposing in its pillar-like stateliness as the tree that presides over the Mariposa Grove.

After all, mere figures have their limitations. They are not expressive of Sequoian size. This may be due to the columnar character of the Sequoia's trunk. It rises smooth and unbroken by protuberance of any kind for a hundred to a hundred and fifty feet. Vastness is so artfully given emphasis and completeness that the whole is not a monstrosity. Symmetry is so perfectly achieved that there is no straining for enormity. What would be a commanding height for a building on a flat level surface appears not out of the ordinary in the Sequoia. This is perhaps why a

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first glimpse of the Sequoia is sometimes disappointing. Examination and meditation are necessary before the grandeur of the tree "grows" upon the observer. Then he is filled with a feeling of awe that no grandeur of architectural pile could possibly inspire.

The Mariposa Grove possesses the tallest of the Sierra Sequoias, the Mark Twain Tree. This magnificent specimen lifts its proud head 331 feet into the sky. Thus, it would reach nearly two-thirds of the way up the lofty Washington Monument and would over-top the dome of the Nation's Capitol. Yet those who gaze upon it for the first time depart doubting. Seeing is not believing. Its appearance is anything but that of the tallest Giant Sequoia on the globe. Nevertheless, the measurement is accurate and authentic and must stand.*

Other Sequoias rank close seconds to the Mark Twain Tree in height. The Captain A. E. Wood, with a height of 310 feet, is not far behind. The Columbia, 294 feet high, the Nevada, 287 feet, and the Georgia, 270 feet, are all exceptional trees. In fact, a score of others could be enumerated before the imperial Queen of the Forest would be reached, whose 219 feet of trunkage place it within the average height of the Giant Sequoia.

Most perfectly formed of the Sequoias of the Grove is the Alabama Tree. The pioneers called

*This measurement was made in June of 1912 (as were the other measurements given on these pages) by David A. Sherfey, resident engineer of the Park at this time.

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it the "Pillar of the Temple." It has developed under full sunlight and is magnificently balanced in all its proportions. Truly, it is one of the finest examples of "Nature's forest masterpieces," as John Muir was wont to designate the Sequoia. Fit to support any temple, it stands marvelously perfect, unmarred by fire, untouched by disease, undisturbed by the violence of the elements. Centuries have passed over it, centuries that have noted many disasters in the march of civilization, and yet it has remained free from accident. Its heroic stem is as roundly perfect and as regularly tapered as though turned in a lathe. Unbroken by a limb upwards of nearly two hundred feet, with an instep that adjusts itself to the mass it supports with elegant finish, it discloses a trunk with deeply and widely furrowed ridges not unlike a pillar that Phidias might have fashioned. But no pillar ever conceived by man bore a tint more ravishing or a luster more superb than this. When spotted with shifting patches of golden sunlight, its cinnamon-reddish trunk would put to shame the richest colorings of Numidian marble.

Nor has any pillar of stone ever supported a more exquisite structure than the crown of this Sequoia. Possessed of almost an artificial finish, it is a gracefully trimmed, singularly perfect dome. The supports of this crown leave the trunk in a woody wilderness of huge arms, wild in ungovernable expression, knotted and confused as those of giants who toss their arms in anguish.

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These great limbs, regal-hued in rose and purple, dissolve themselves abruptly into masses of stumpy branchlets which in turn spray out into a soft film of deep blue-green foliage. Indeed, it is impossible to distinguish against the skyline exactly where this arch described by the foliage ends and where sky begins. So subtle are the edges of this crown that they appear to melt away into the heavens. Yet more wonderful is the flame-like semi-halo visible along the crest of this tree just after a rain. Ruskin noticed this light on pine trees. "The whole outer crown," he states, "becomes a thing of light, dazzling as the sun itself, for every minutest needle is bedewed and carries a diamond, as if living among the clouds it had caught a part of their glory."

Never has Nature presented a more striking contrast, a more extraordinary comparison than in the trunk and foliage of the Sequoia. They are at the opposite ends of the scale. One presents the utmost massiveness of outline; the other the most delicate curvature and grace. The trunk has qualities of permanence, classic mightiness, enduring power, and the colossal dimensions that go with two thousand years of age; the foliage possesses qualities of fleetness, ephemeral frailty, fragile beauty, and the airy nothingness of a dream.

Nearly all the other Sequoias of the Grove have had their perfection marred by three agents of destruction—time, fire, and man. The remark-

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able manner in which they have triumphed over their destroyers makes them unique among trees. Seared, scarred, and mutilated all their lives, they have carried on in their great, patient, rugged fashion. Accidents seem unable to disturb more than momentarily their peaceful way. Calamities that would vanquish other trees only serve to quicken their hardy, tenacious growth. Almost invincible, they appear to know neither despair nor defeat. Even when overthrown by the combined strength of the elements of heaven and earth, though uprooted and prostrate, they refuse to perish utterly. Would that man had the stamina of the Sequoia.

Time has not laid a heavy hand on the Sequoia. On all living things it leaves its trace. But never within the compass of human reckoning has time alone been able to take off a Sequoia. Fire must first prepare the way by eating through the center of gravity of its trunk. Then, and only then, are the tempests able to overthrow it. This is because the scanty foliage of the tree never makes for top-heaviness. One of the most interesting habits of the Sequoia is the pruning of its own top. Unnecessary limbs are rarely retained. Not infrequently in Sequoian groves when there is neither wind nor other apparent cause, a crash in the night is heard and at dawn the ruins of a limb are found beneath one of the Giants. Evidently the Sequoia knows that a tree which carries its crown two hundred and fifty feet above its base

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cannot wrestle with the fury of the winds under full sail. Consequently, it is only after fire has deflected one of these columns from its plumb-line and when the mass of earth about its roots has been softened by rain or snow, that the gales succeed in prostrating the Sequoia.

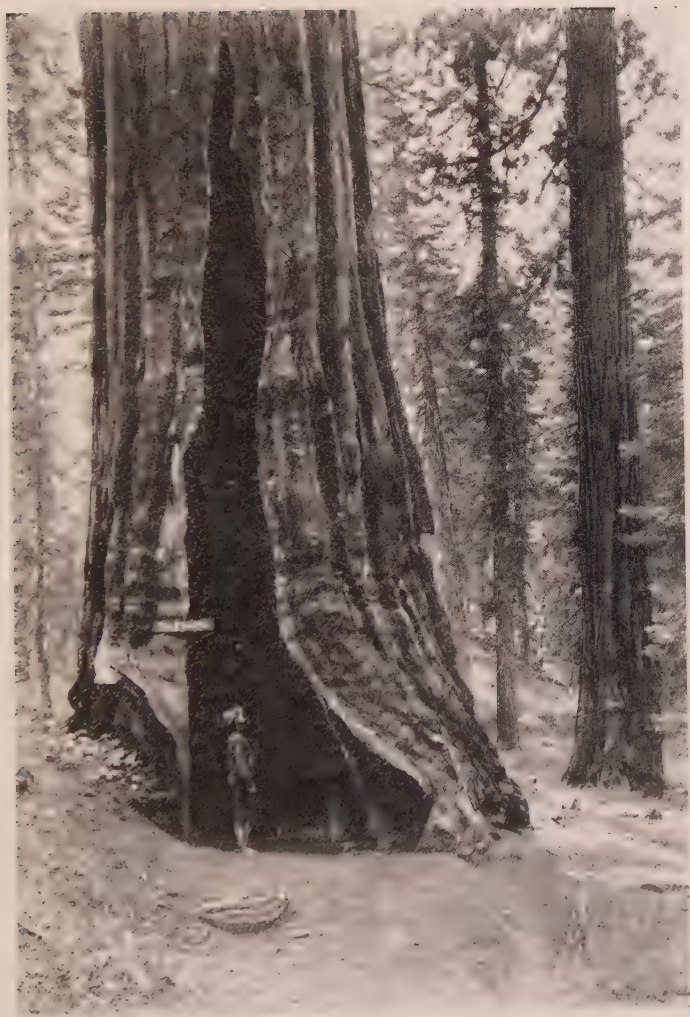
The Fallen Monarch and the Fallen Giant are the two most noted of this category in the Mariposa Grove. The former, when standing in the full glory of prime, must have been the equal of the largest of the lordly monarchs of today. Its bark gone, its sap-wood decayed, its base badly fire-scarred, it still measures over 85 feet in circumference. But for all its great size, its refusal to perish is even more wonderful. It is not a mouldering mass which tourists can idly kick about, but a solid trunk whose wood is as firm and sound as on the day the tree fell to earth. How long the bleached ruin of a tree may have lain on the forest floor is mere conjecture. How old this monarch was before its fall is an equally fascinating speculation. It may be that the circling sun looked down upon it as a graceful sapling when Cheops raised the Pyramids on the plains of Gizeh. Nor are these vast, unmeaning, sepulchral piles erected to the great who exhausted the splendor of Egypt in their building, apparently more enduring than this decumbent monarch.

The other, the Fallen Giant, fell during a storm in the early seventies. Its mammoth prone trunk may be seen from the Cabin porch today.

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Since its fall a troop of cavalry have been lined up in formation upon it and a coach-and-four has been driven along its trunk. Living, it stood among the foremost of the Grove. It was known as the Andy Johnson Tree and was one of the famous giants of pioneer days. Now all its glories have shrunken into a "curiosity," for tourists take a special delight in clambering up and stamping upon its grey surface to test the soundness of its wood.

But the destructive work of time as a whole has been of less consequence than that of fire. Of all the tragedies and great passions of the elements that cross the silent life of a Sequoia, none can compare with the sinister work of this forest fiend. Fire alone seems able to inflict irreparable wounds, and nothing else, not even disease, apparently ever injures the heart of a Sequoia. The immense black charrings on many of the noble trees of the Grove bear silent testimony to great conflagrations of the past. Yet, in a sense, the Sequoia triumphs even over this arch enemy. Fires that totally destroy its neighbors only assail its vitality after many and repeated attacks. Enormous areas of its base may be burned and yet the tree will live on. So erratic, indeed, may some of these injuries become that daylight is let through the tree. Even if it be advanced in age, it will still continue to put forth green leaves, persisting in a really remarkable manner



MARIPOSA GROVE

Photo by H. S. Hoyt

TELESCOPE TREE

Light may be seen through this tree, hollowed by fire

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in the face of misfortune to which a lesser tree would immediately succumb.

The Haverford, the Stable, and the Hermit's Cabin are notable for the large fire-created cavities of their bases. The Haverford has had its broad base entirely hollowed out by flames which have burned a three-chambered archway through the tree across two spurs, the distance of which is 35 feet, and, transversely, 33 feet. Garrulous stage-drivers of early days, whose creative faculties at times spurred them on to daring mendacities, called the Haverford the "Tree of Refuge" and alluded to the fact that 30 horses found safety and shelter within its hollow trunk during a severe storm. When it is determined, however, with certainty that but half this number of horses really were sheltered, the size of this cavern in the base of a living tree is still sufficiently striking.

The Stable Tree has a capacious hollow in its base almost forming a room eight by twelve feet. It was because "Old Cunningham" manufactured his quaint stock of curios in the hollow of this tree that it gained the fitting appellation of the "Old Curiosity Shop." Later when the soldiers of the Government patrolled the Grove they tied their mounts within this room-like hollow—a practice which eventually caused it to be known as the Stable Tree.

The Hermit's Cabin is a charcoal-lined circular chamber with a very fine domed ceiling. It

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affords a spacious room in which some denizen of the mountains could dwell in princely comfort and contentment. Wild beasts may have made it their forest lair in the past, and the Indian may have flaked his arrowheads within it while waiting for a storm to pass. It is not altogether improbable that some failing miner may have used it for his hermitage, seeking solace in the vast, silent bowers of shade about him and submerging himself in the immense peacefulness of the Grove—wandering, rambling at will, pausing to drink at a spring, or anon to examine a flower, or to warm himself in the sun, bewildered yet charmed by the fascination of it all; a dreamer seeming to hear the laughter and voices of dear ones at home, but in reality listening to the songs of birds.

But there are Sequoias even more fire-tortured than these. The Telescope Tree is an erect, burnt-out, tubular trunk 220 feet high. Its heartwood is completely gone. Tourists may enter it and look up through its chimney-like cylinder to the blue sky above. Internally, its appearance is that of a tree from which life has gone forever, while externally it appears to be a perfectly sound tree. Of course, its top is a ruin. But one up-turned limb remains. This abounds in the spirit of intense life, for its bossy patches of deep blue-green foliage still bear cones whose seeds perpetuate the endless cycle of the royal race. Thus this tree—hardly more than a mere bark-

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covered shell, clings to life with a Roman tenacity—the epitome of vitality.

Pluto's Chimney is yet more of a ruin. It is nothing but a huge old stub of a tree, blackened and burned inside and out. So forbidding and fearsome is its interior aspect that some call it the "Devil's Dungeon." But for all its dismal repellence, it, too, has its story to tell. Like a battle-scarred veteran, its blackened body tells mutely of a mighty struggle bravely waged against the forest fiend. The sun lights its gloomy circular vault and sheds a troop of bright sunbeams upon its dead walls as though to bless them and warm them back to life. Even winter's clouds sift snow in its burnt-out shell as though to cool its fire-ravaged sides.

Yet another of these enormous charcoal-lined cylinders lies prostrate not far away. Early travelers were accustomed to pursue each other through it on horseback. But this pastime was put to an abrupt end by a nearby Sequoia falling across it and breaking in the roof. Since then spring floods have deposited considerable quantities of sediment, lessening its diameter, so that today a man can just walk erect through it. Still other similar fragments, the monuments of departed monarchs of other centuries, dot the forest floor. To search these out is a pleasure worth the climbing of a mountain to enjoy. Through ragged knot-hole openings charming and enchanting glimpses of the forest may be

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obtained. Seemingly, all that is unattractive is hidden from view and the beauties of the picture can be contemplated at leisure.

Far greater than the destructive work of time is that of man. Against his double-bitted axe the Sequoia is completely powerless. Ironically enough, the larger and more remarkable the tree the more certain and swift its doom. The rarity of the species is no bar against its destruction. Indeed, man seems even eager to barter this most priceless heritage for a handful of yellow gold. Wherever greed has had free rein the Sequoia has been lumbered. For the past fifty years cuttings in privately owned holdings of Sequoian tracts have continued unchecked. The axe has removed a large part of the Sequoias in the Redwood Mountain, Merced, and Tule River regions, and the sawmill is still at its work of destruction in the magnificent forests of the Kings and Kaweah River basins. "Earlier cutting," states Sudworth, "took only a part of this timber, but the later operations have removed practically every tree."

Has man no regard for the past—no sentiment of conservation for the future? How can he trace the arduous survival of the Sequoia through geological ages without acquiring a peculiar admiration and love for it? How can he look upon such a living monument which connects the past with the present and blink at its intellectual and aesthetic value? When the Germans bombarded Rheims in 1914 and Turkish cannon demolished

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the Parthenon of Athens in 1867, all lovers of architecture and the beautiful stamped such acts as barbarism. But the rose window of Rheims and the colonades of the Parthenon *can* be restored. They were merely man-made. Living things, however, once destroyed are forever lost to the world. When the axe destroys a Sequoian grove it is irrevocably gone, for, after all, "only God can make a tree."

Were the commercial value of the Sequoia in any manner adequate to its monumental value, all this villifying would be but simon-pure sentimentality. Could the wood of the Sequoia be used as girders and columns in great halls and solemn cathedrals, its commercial use would somewhat befit the nobility and heroic proportions of the tree. But it is otherwise. The light, soft, brittle wood of the Big Tree unfits it for supporting ponderous roofs and massive balconies. No wise architect would use it in this manner. In fact, nearly every wood grown on the American Continent is superior to the Big Tree in the weight it will sustain.

Few other trees in their lumbering exceed the Giant Sequoia in wastefulness. More lumber can be obtained from ash or maple than from the Sequoia of the Sierra. This is due to the enormous size of the tree and the brittle character of its wood. When a falling Sequoia strikes the ground with the force of many thousands of tons, any inequality of the earth's surface suffices to break

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its trunk. Blasting must then be employed to reduce the great pieces to sizeable dimensions for handling. This results in fragments of all sorts unsuited for commercial use, to say nothing of the great loss of that which is cracked and splintered beyond all hope of salvage. "No where on the face of the globe," says Dudley, "can there be found more wasteful lumbering. One-half to even three-fourths or seven-eighths of the great trunks of the Sequoias of the Converse Basin (near the Kings River) were broken and rent beyond use in falling." In substance, breakage is so great that the major portion of the wood is suitable only for grape stakes and fence posts and the like. If no other tree save the Sequoia could furnish these products, the destruction of its forests might be justifiable. Hence, no other conclusion can be reached than that the lumbering of the Sequoia is wholly unnecessary and deserving of the severest condemnation.*

Yet more must be told. Much vandalism has been committed on the Sequoia by man. Early accounts are filled with these "botanical tragedies" which were perpetrated whenever the venture appeared profitable. For instance, in 1878, a butchered specimen of the Giant Sequoia was shipped from Tulare City to San Francisco for exhibition purposes and gain. It was the largest

*The wood of the Big Tree must not be confused with that of the Redwood, for the latter has a very high economic value as a commercial wood, and is noted for its many excellent qualities.

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Sequoia the vandals could find in the forest. Fourteen feet above the ground they made the first cut and for twelve days nine men disturbed the age-old peace of the place with the ring of axes and the rasp of saws. Finally, the monarch that had defied the passions of the elements for centuries fell, conquered by the blade. Then the inside of the stump, which was 21 feet in diameter, was hewn out to within a dozen inches or so of the foot-thick bark and the hollow shell sawed into fifteen gigantic slabs. With indefatigable energy, a road six miles in length was constructed to haul these out of the forest. "Each slab made a load for eight horses, while two railroad cars were required to transport them all. The so-called "curiosity" was set up on Market Street as the largest tree yet discovered in California. Strangely enough, this act elicited hardly a whisper of indignation or a word of protest from Californians who seemed to regard the exhibit as a "real novelty."

The Calaveras Grove suffered grievously at the outset from such barbaric acts. Two of its most imposing trees were destroyed. One of the grandest trees in the Grove was bored down with pumpaugers by five men in twenty-two days in order to make a dancing floor- -butchered, in other words, to make an American holiday. Its great trunk, 302 feet in height and 96 feet in circumference, was hacked and chopped by the usual "pilgrims" desirous of securing specimens of

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their visit. The other, the "Mother of the Forest," was stripped of its bark in 1854 to a height of 116 feet—veritably "skinned alive" so that its bark could be sent to the Crystal Palace in England, where the curious of Europe could see how large and fine California's Big Trees really were. Naturally enough, this act brought death to the tree. "For years," Hutchings remarks, "its majestic form perpetually taunted the belittled and sordid spirits that were the authors of her ruin. Yet the elements sympathized with her unmerited disgrace and attempted to hasten her dismemberment to cover the wrong." In the early part of the present century a fire almost completed the work. Now but a great blackened trunk remains with two disfigured limbs bent upward like human arms as if to say, "Forgive them, for only in darkness does vandalism flourish."

Fortunately, the Mariposa giants have escaped all this ignominy. The serenity of the grove has been unbroken by the death chant of a Sequoia. It has never echoed to the measured chopping of the axe, the droning swish of saws, the hoarse call of teamsters, the clanking of irons, or the shrill whistle of the donkey-engine. The sawmill has eaten its destroying way all around its boundaries, leaving desolation in its wake. But the Mariposa Grove has been spared this fate. A more noble use has been found for it.



MARIPOSA GROVE

WAWONA TREE

The curious of the world have passed through this Sequoia for half a century

Photo by H. S. Hoyt

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Only two trees within the boundaries of the Grove have been touched by the axe—the Wawona and the California. Both have huge openings hewn through them. However, this cutting has not been the work of vandalism, for fire had prepared the way by almost tunneling through them. It was possible, therefore, to complete the opening with little injury to the tree in each instance. Indeed, it is not impossible that both of these Sequoias will go on living long after the generation that let daylight through them has been all but forgotten. The passage-way through the Wawona was cut during the late seventies when Henry Washburn built the first road through the Grove. The opening in the California Tree was made much later, so that tourists could experience the novelty of driving through a living tree in the late spring when the snow was yet deep in the upper part of the Grove where the Wawona stands.

In all the world there is probably not another tree more celebrated than the Wawona. It is neither wonderful in the massiveness of its great red stem, or glorious in the symmetry of its domed crown; nor has it the venerable picturesqueness of the Grizzly Giant, or the port, pomp, or perfection of the Mariposa Tree. Its fame rests simply upon the ten-foot passage-way through its base. Pictures of it appeared in geographies over half a century ago; stage coaches have passed through it times innumerable to the

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amazement always of certain of their passengers without discomfort, and now thousands of automobiles drive through it annually.

Of the wonder trees of the Mariposa Grove perhaps none offer a greater object lesson to man than the Faithful Couple. From earliest times mankind have destroyed each other and the fallacy of war has yet to be learned. The Faithful Couple represent two trees that warred with each other all their lives, never realizing the value of peace until, in the weakness of their old age, they united their almost spent strength to fight the greater battle against death.

They are the sole survivors of a former commonwealth of seedlings. In company with a community of tiny trees they began their lives on ground cleared for their reception by the fall of a giant of a former generation or by a ground fire. Either of these agents exposed the mineral soil so necessary to the life of the germinating seed. Sunlight, too, must have been sifted down in proper amounts since but little shade can be endured at any stage of the Sequoia's existence. Even then the hold this zealous crop of seedlings had on life was precarious. From the instant they cast their tiny shadows on the ground, excessive moisture, erosion, and wind threatened their existence. Indeed, many must have perished in their earliest infancy from these dangers.

As soon, however, as their branches and their roots began to interfere with each other, a

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struggle of yet another sort ensued, and each seedling began to battle fiercely with its neighbors for light and nourishment. At the same time each exerted a beneficial influence over the other by preventing the winds from drying out the soil or the rains from carrying it away. Each was a member of a "protective union," mutually making for better conditions of growth which gave them greater strength to carry on the fight for life. Strangely enough, each continually comforted and assisted while at the same time attempting to destroy each other, for they were the most deadly of enemies. Each was shouting "excelsior" and endeavoring to rear its head above those of its fellows in the race for the skies. "Aspire or die," became the watchword of the group. Gradually the most fit of the Sequoian youths over-topped their slower rivals, eventually shutting off their share of sunlight and ultimately snuffing out their lives. For generations this struggle toward the sun went on, as terrible as it was silent, each survivor eliminating its rivals. And all the while the sun, the one object of this eternal striving, neither knew or apparently cared.

As the number of the defeated increased and the veterans became fewer and fewer, the struggle became less intense. At last, but two of all the host that started the fray of perpetuity versus extinction were left. These remained to preach the aristocracy of the forest—that it is of the

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best and for the best. The weak and unfit had been vanquished. Only the straight-trunked and the strong lived to enjoy the commonwealth of the sky. They were the chosen few. Now, unable to lift their proud heads higher into the clouds, because Nature cannot pump water to such dizzy heights, these two giants attempted to crowd one another off the earth. Not satisfied that they had found a place in the sun, they had to bear each other ill will. The struggle continued, but each was as powerful as the other. At length, having wasted their energy in useless conflict, they came to terms. Embracing, they finally united in confiding communion the better to brave whatever blessing or blast fate might bring them in their declining years. Have they learned the worth of peace too late?

Near the Cabin stand four wonderfully perfect Sequoias. So military in precision are they, so formal and rigid in their poise, and so perfect in alignment, that they seem to be standing ever at attention. Hence, they have been designated as the Old Guard. Others, however, prefer to call them by the more poetical name of "Sun Worshipers," for, as the sun traces its long descent of midsummer afternoon, it throws a golden shower of sunshine upon them, and they in turn appear to revel in all this glory. Their great limbs, the size of ordinary trees, seem uplifted in prayerful attitude, while nearby companies of pine and fir appear to gather about these four high priests of

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the sun like worshippers in humble veneration. At sunset, during the silent battle between light and darkness, this effect is singularly impressive. Their fine round trunks seem to glow, not unlike red-hot steel drawn from intolerable flame, and their cool green domes are splashed with floods of vermillion, gold, and purple, as the fading light plays its changing wizardry upon their delicate foliage. Only at such a time does the Sequoia lose its crushing dignity and its overwhelming complacency to become a thing of beauty. Then, as the shadows steal forth and enfold the solemn forest, and the red trunks burn lower and lower until, finally, like lamps they go out, a mighty calm settles upon their silent crests where departing day lingers in a last caress.

No review of the Mariposa giants would be complete without due mention of the Fallen Hero Tree, which was dedicated by the American Legion of California in the summer of 1921, to the Unknown Dead of the World War. Surely, no dedication could be more fitting, for nothing living is more monumental than the Giant Sequoia. Besides is it not better to preserve monuments than to build them? "Almost no structure," declares Dudley, "erected by human hands has come down to us intact through the lifetime of a Sequoia; and few that we can admire which are hewn from inanimate marble or granite can be compared to a living organism vast in life and complete in the records of every year of its

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existence. An empire or republic may be compared with the life of this great tree, but what empire or republic has lived twenty-five centuries? None worthy of the name. Then, in the building of the Sequoia, no blood has been shed through all its twenty-five hundred years of life, no injustice or oppression have secured the means necessary for its construction, no hatred or strife has been engendered, no accident occasioning pain or suffering—no extinction of human life has left a stain on the history of its growth.”

Again, from the standpoint of art and permanence, no dedication could be more appropriate. Few living things merit a higher place in art than the great Sequoia. It appeals to the highest intellectual and spiritual qualities of man. Of all trees it is the most dignified and majestic. After a shower its crown is oftentimes vested with a nameless light—a glory not of this earth—never seen on granite crag or marble temple. Then again no living thing is more enduring than the Sequoia. Tombstones that mark the graves of the known heroes will have become cornerless and the names they bear will have been obliterated by the elements; those who knew and loved the names will have run their brief course and be laid at rest, as will their children and many generations after them, before the Fallen Hero Tree ceases to transmit to the coming ages the memory of the Unknown Dead who fought, suffered, and died in the Great War.

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Assuredly, the Mariposa Grove has other values than that of a mere "show place." Aside from the size and age of its far-famed trees, the Grove has power to inspire and its lesson to teach. Its trees have stood steadfast for centuries indifferent to time and tide, the better to admonish mortal man lest he forget his littleness. To contemplate them in cold calm without feelings of reverence is impossible. No artist has yet been able to adequately depict their God-like composure and their haunting grandeur. Indeed, they are as gloriously beyond the brush as they are above words. That stirring apostrophe of Byron to the ocean is the nearest approach in all literature to their greatness. Most mysterious of all natural wonders, they have looked on events that distinguish centuries. Over them has been drawn the mantle of the past and within them are locked many of the secrets of history.

To stand in the presence of such ancient things is to be able to sense something of the riddle propounded by the inscrutable Sphinx. And yet more wonderful is such an impression by moonlight. On every hand tower the stern columns of the Sequoias, their shaggy crowns gemmed with stars. About them are grouped other tree hosts, rising in files and striving in vain to emulate the ample girth and majestic height of the giants. These lesser trees are pines with a perfection almost faultless, cedars as beautiful as those of Lebanon; and firs with a grace not unlike that of

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hills sculptured by rain drops. Among these are yet others—trees crooked and short and stumped; trees tall and slim and slender. Through the rents in the roof of this aged forest the moon looks in, sending long arrows of light to investigate some pitchy obscurity, splashing the forest floor here and there with blotches of silvery light and banding the open spaces with monstrous slanting shadows of Sequoian columns. Formless masses of impenetrable darkness loom everywhere. All the rest is a region of half-light in which everything is seen and nothing recognized. All is wrapped in a cloak of unreality, lending a wierd, almost theatrical effect. Shadows move with a ghostly sound throughout the cavernous chambers. The perpetual peace of night is upon the forest.

Then it is that the Sequoia is almost holy in its tremendous power to inspire reverence. Only in the solitudes of the sea where there is no trace of land or sail to break the fearful circle set upon the surface of the great deep is such an impression of the mystic charm of space received. Here the immensity of sea and sky is comparable to the over-shadowing majesty of the Sequoia. The soul is overwhelmed with solemnity. The immeasurable calm and solitude of it all overflows like a tide. One seems on the threshold of oblivion. Life's endless toil and endeavor are at an end, for one has caught a glimpse of the immortal.

CHAPTER V

OLDEST OF LIVING THINGS

WHEN that intrepid botanist-explorer, David Douglas, who in his lonely wanderings along the Pacific endured numberless hardships that he might make the flowers and trees of the coast known to science, first saw the Redwoods while traveling through the Santa Cruz forest in 1830, they invoked in him feelings of the most profound awe. He hesitated to describe them lest he fall into discredit among his friends in England. "New and strange things seldom fail to make strong impressions," he wrote in his Journal, "and are therefore frequently over-rated. This tree gives the mountains a most peculiar, I was going to say, awful appearance—something which plainly tells me that we are not in Europe."

Little did this awestruck wanderer know that yet larger trees stood in these princely forests of the Western world. In fact, almost a quarter century elapsed before the presence of the Giant Sequoia was made known. John Bidwell has sometimes been accredited their discovery in 1841. But the more acceptable and authoritative record of discovery is that of A. T. Dowd who, while hunting, came quite by accident upon the Calaveras Grove eleven years later. Even then Dowd's story was accepted with much doubt and

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it was necessary to resort to a ruse in order to induce even a few skeptical workmen to confirm the discovery. Still the truth of David Douglas' moralizing on the over-rating of strong impressions asserted itself, and traveler after traveler had his reputation for truthfulness sorely tried until almost a "convention of naturalists" had seen the mammoth tree and given their unanimous testimony as to its size. Then the great Sequoia became an almost meteoric celebrity, for few plants have attracted as much attention in so short a period of time. Since then the Sequoia has been lauded in every land as the largest and most nobly proportioned of trees. It has found its way sometimes in a most engaging manner into literature. For instance, in Victor Hugo's *Toilers of the Sea*, an old seaman who had gathered from his voyages many wonderful stories, tells a child of a hollow tree in California "so vast that a man on horseback could ride one hundred paces inside."

Yet the prodigious size of the Sierra Sequoia is hardly as wonderful as its remarkable age. That it should become known as the oldest living thing that human eyes can look upon is truly marvelous.

The elements to which the Sequoia is indebted for its great age are as enigmatic as they are controversial. Foremost of these is the tree's intense desire to live. It seems never weary with the weight of years, and is blessed with a tenacity, a faith in life granted to no other living thing. From the finely interlaced network of its

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shallow root system to the utmost tip of every tiny needle, it displays a fervent love of life.* Indeed, there is a joy in noting the eager attitude of the foliage as it stretches out toward the light to gather the sunshine. Every unnecessary and useless branch is promptly discarded and the entire energy of the tree is devoted toward putting forth new foliage the better to capture the sunbeams.

The altitude in which the Sequoia grows produces the loveliest verdure of the Sierras. All seems submersed in an ocean of sunlight. It is a region lifted above the thirsty foothills and yet far enough below the vacant solitudes of perpetual ice and naked rock to be free from the searing heat and dust of the former and the tragedy and wreck of the latter. John Muir so delighted in the "glorious floods of light" that pervaded this region that he referred to the Sierra, not as the snowy range, but the "Range of Light."

This abundance of sunshine, then, helps to explain the splendid conifers that the middle heights of the Sierra produce. The amount of solar heat sensibly affects the growth of trees. It is in the presence of sunlight that the green coloring matter in leaves is able to digest plant food. Yet this is not the all-important factor. Moisture plays a most potent role, also. The dis-

*Scientifically speaking it is not proper to attribute a will to a form of plant life. Its use here is in a non-scientific sense.

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tribution of the lingering patches of the Sequoia reveals the powerful influence of moisture over the Big Tree. In the northern limits of its range, the Sequoia exists at a lower altitude (4,500 feet) where moisture is plentiful, while in the southern portion of the belt it climbs nearer the summit peaks (7,000 feet) where the drying heat of the San Joaquin plains is modified by elevation. The inexorable force exerted by moisture over the Sequoia is even better demonstrated by individual trees. All the better specimens are found growing in well watered places. Springs often bubble forth from the wide-spread masses of sponge-like Sequoian roots, indicative of the constant underground irrigation system that supplies the tree with mineral nutriment. The stunted are nearly always found growing in the dryer spots, looking very rusty but resolute; the thrifty tower about boggy meadows or along the drainage of water courses whose waters roar in their channels in flood time and trickle from pool to pool with faint murmur in Autumn after the azalea has bloomed and the mountain lilac has lost its badge of Spring.

Indeed, it would be difficult to conceive a tree that has established a more adequate and harmonious relationship in concordance with both climate and soil. Under the most constant stimulus of the elements so vital to the growth of trees in general, the Sequoia is sustained by

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soil, deep and rich, by sunshine, and by moisture, as well as by the other elements which it, in common with other associated trees, derives from the air. Nevertheless, the sugar pine often enjoys such idyllic conditions, as do the silver fir and the incense cedar. Yet the Big Tree exceeds them all in size. Since it so outranks its fellows in girth and longevity, the Sequoia must, therefore, possess certain superior innate qualities that are found wanting in other trees.

Theoretically, there is no limit to the girth of trees. There *is* a limit, however, to the height of a column which Nature, working silently through centuries, builds. One theory holds that this limit is governed by the distribution of sap. When the tree attains a height beyond which its circulating fluids cannot rise, upward growth practically ceases and all appreciable growth is in girth. Since there are no limits to dilation, the tree is capable of indefinite expansion. Normally, however, counteracting causes which at first retard, then arrest, are continually at work, finally checking the progress of growth. The tree most completely free from such counteracting influences logically attains the greatest size and age.

This, then, is the keynote of the Sequoia's great age. There is a limit to its height, but none, apparently, to its rotundity. So long as the growth of the Big Tree is unimpaired, it continues with patient, steady, indefatigable energy

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to add ring after ring to its stem year after year, century after century. In time the old channels become clogged with insoluble matter taken up by the roots and the annual layers become successively consolidated until the united cells attain such strength that the vast wooden pillar defies the onslaught of the elements. It stands a monument of power, emblematic of the limitless desire to live.

"Trees," states Asa Gray in his famous essay on the *Longevity of Trees*, "far outlast all living things. They never die of old age, but only from injury or disease, or, in a word, from accidents. If not destroyed by accident, that is, by extrinsic causes—they do not eventually perish, like ourselves, from old age. It is commonly thought that they are fully exposed to the inevitable fate of all living things, but this springs from a false analogy which we have unconsciously established between plants and animals. This popular analogy might, perhaps, hold good if the tree were actually formed like the animal, all parts of which are created at once in their rudimentary state, and soon attain their fullest development so that the functions are carried on throughout life in the same set of organs. If this were the case of the tree it would likewise die sooner or later of old age.

"But the tree is an aggregate of many individuals united in a common trunk and why should not the aggregate, the tree, last indefinitely? To

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establish the proper analogy, we must not compare the tree with man, but with the coral formations in which numerous individuals, engrafted and blended on a common base, conspire to build up immense coral groves which have endured for ages; the inner and older parts consisting of the untenanted cells of individuals that have long since perished, while fresh structures are continually produced on the surface. The individuals, indeed, perish; but the aggregate may endure as long as time itself. So with the tree.

"Only the leaf may be said to die of old age. It lives but a single season and is the proper emblem of mortality. But the leaves are necessarily renewed every year, so are the other essential organs of the plant. It annually renews not only its buds and leaves, but its wood and its roots; everything, indeed, that is concerned with its life and growth.

"Though the wood in the center and large branches—the produce of buds and leaves that had long ago disappeared—may die and decay; yet, while new individuals are formed on the surface with each successive crop of fresh buds, and placed in as favorable communication with the soil and the air as their predecessors, the aggregate, the tree, would appear to have no necessary, no inherent limit to its existence."

Of the many chapters of evidence gathered by this American botanist on the remarkable age of

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certain trees, none made mention of trees older than the Sequoia. The ancient oak which cost the poets much mental toil in their panegyrics to its strength and endurance falls far short of the Sequoia in age; nor do the lordly Cedars of Lebanon, "from which the sacred writers derived so many noble images," nor the venerable yews, "whose branches were used by our pagan ancestors to deck the graves of the dead as the emblem of immortality," exceed it in years. The Mexican cypress may have witnessed the rise and fall of the Aztec Empire, but they are not coeval with the Christian era that has seen the decay and death of a score of empires. Sengal Baobabs and Teneriffe Dragon Trees may be reputed to be the "most ancient living monuments in the world," but they do not antedate Solomon's time.

Since no tree, apparently, surpasses the Sequoia in longevity it must enjoy an immunity from the causes that take off other trees. Ordinarily, weakness in trees results from a diminution of resistance and rejuvenating power, or a loss of vitality. The protecting bark is often lacerated and stripped away through accident, creating wounds through which insects gain easy entrance to carry on their insidious work. Fire often exposes the tender tissues in which the spores of fungi find lodgment and breed disease. Instances of the death of trees through these causes are legion throughout the forests of the Sierra. The magnificent silver firs seldom live to



MARIPOSA GROVE

FALLEN MONARCH

This tree shows no evidence of decay after decades of mountain weather

Photo by H. S. Hoyt

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see their three hundredth birth year, and though externally of sound and fair appearance, when cut they are not infrequently found to be a mass of watery, decayed wood inside. Through a loss of vitality the noble sugar pines likewise are often devoured by larvae soon after reaching maturity.

Yet strangely enough, the Sequoia appears untouched by the forces of decay. This tale of a struggle into being, of a life lived, of decay and death, is written on all of Nature's works. The way of life and its destined end is toward oblivion. But causes that conspire to bring about the end of trees in general appear unable to quench the vitality within a Sequoia. It rarely ever shows the slightest evidence of weakness, and appears never to be defiled by the ravages of disease. Injuries only of the greatest magnitude are a source of irrecoverable loss. Indeed, Sequoias that have great holes burned in them are magnificent in their refusal to accept defeat. They summon their splendid resources, clutch the soil with a broader and deeper hold in their determination to enjoy life to the very last. So long as there is a sound root left, it is the way of a Sequoia to cling to life. No one who has an appreciation of the wonders of Nature cannot behold this grim, steadfast, dogged resolution that prevails against all odds without feeling the beauty of such an unconquerable spirit.

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The wood of the Sequoia seems to be provided with every refinement of durability. Natural decomposition is slow and its wood wastes away insensibly like granite. So resistant is it to weather, to the rigorous and incessant forces of obliteration, that it is hardly an exaggeration to affirm "that a log cabin built of Giant Sequoia logs on granite will last as long as its foundation." The resinous matters that pervade wood are considered a preservative against decay. Hardwood has always been indicative of durability, whereas the wood of the Sequoia is soft and brittle. But for all its softness and lack of resin, though hoary and mossy with age, and deformed by centuries of violent storms, the Sequoia is nearly always sound *from the sapwood to the center*, and this is more than can be said of nearly all the "remarkable and curious cases" of trees that have enjoyed a great longevity as cited by Asa Gray.

Most impressive of the excellent qualities of the Sequoia, however, is its amazing vitality. In the ability to recover from accident it is probably excelled by no other tree. The shadows of twenty centuries may sleep beneath its boughs, yet its growing power is as active as ever, the tree ever rallying in apparent youthful vigor to replace its broken, tempest-tossed crown. It defies even the wrath of heaven. Though lightning may shatter a pine to splinters, it can but knock off fifty feet, more or less, of a Sequoia's crown. Never has it

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been known to have destroyed a Sequoia outright. "Thousands of years the Sequoia stands offering its head to every passing cloud as if praying for heaven's fire as a blessing," observed John Muir. "Then when the old head is off, every bud and branch becomes excited like a colony of bees that have lost their queen, and tries hard to repair the damage. Branches that for centuries have grown out horizontally at once begin to turn upward and all the branchlets arrange themselves with reference to a new top of the same ineffably fine contour as the old one. And curious enough, all very old Sequoias have lost their crowns in this manner. Of all living things, they seem to be the only ones able to wait long enough to be struck by lightning."

The power of a Sequoia to heal an immense fire scar is another noteworthy manifestation of its vitality. Its resistance to fire is almost incredible. Its massive, unresinous bark offers an almost asbestos-like exterior to the eternal antagonist of the forest. Its wood, too, is so non-resinous in character that it burns with marked sluggishness, and it is only after repeated attacks by fire that the wood will be consumed.

Even when fire has made serious inroads the Sequoia refuses to be discouraged. It musters all its energy and attempts to heal the burned area by extending the living tissue over the blackened wound and reuniting the broken circle of its cambium layer. This healing occurs in a rhythmical

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and pulsating manner accompanying the seasons, beginning along the margins of the burned area. Each year the layer of new wood-tissue encroaches slowly and patiently upon the injured area, diminishing the charring until the two opposite folds touch one another. In a few years the bark is pinched out and once more the annual layers become continuous around the tree. The wound is healed, and as the centuries pass it recedes deeper and deeper within the heart of the tree, unchanged and never a source of decay.

The late Dr. Dudley examined the stump of a lumbered Sequoia in the Converse Basin which registered the effects of great forest fires. He found the tree to be 2,171 years old when cut down. At the age of 516 years the tree suffered its first burn, acquiring a scar three feet in width. One hundred and five years were required to heal the injury. A second burn occurred when the tree was 1,712 years old, making two wounds, one twelve inches in width, the other two feet. One hundred and thirty-nine years passed before these scars were covered. Then, when the tree came to be 2,068 years old, a tremendous conflagration burned a great scar eighteen feet wide and thirty feet high. This was still unhealed when the tree was cut down. Professor Dudley estimated that at the rate of the above healing it would require at least *four centuries and a half* to repair the result of the injury done by this last forest fire.

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No other tree could have lived under similar circumstances without becoming diseased or decayed. This greatest among trees stands alone in its superb resistance to insect and fungi attack, and this, coupled with a marvelous recuperative power, enables it to withstand injuries of such considerable magnitude, and to endure long enough to recover from them. Its vitality, as deep as it is tenacious, and its very love for living, vest it with this sublime power. Symbol of an unconquered will, the Sequoia has caught more of the immortal than any other living thing. The Gordian Knot of its existence would never be cut were it possible to protect it for all time from fire and the axe. Had it remained untouched by flames of the past, the vastly shrunken present-day habitat of this great tree might possibly contain the ragged rear guards of the departed giants of the Miocene, and a single Sequoia would be old enough to establish a paleontological era.

CHAPTER VI THE ETERNAL TREE

THE Grizzly Giant is among the first born of the living things of the earth. It bears greater evidence of extreme age than any other living Sequoia of the Mariposa Grove and may be of a former generation. The companions of its youth are dead and buried in their graves of leaf mold and it seems to have been nearing its prime when the other lofty monarchs of today were unknown. Grand and unconquerable, mightiest of the mighty lords of the forest, it stands like an agonized Sampson of the woods, blind and lost, with a hundred great arms groping and reaching out. Like all Nature's works of power, it seeks to express more than it can convey. Homeric in its gravity, marble in its impassiveness, and majestic in its tranquility, it is unapproachable among things that live. Aspiring toward the clouds and on speaking terms only with the heavens, its equanimity seems unruffled by storm or tempest; its sweet serenity unsullied by anger, hatred or other passions unworthy of an immortal nature. For a thousand years the earliest rays of dawn have gilded it. For ten centuries departing day has lingered and played on its summit. Surely the mellow notes of the hermit thrush issuing forth from such loftiness sound more angelic there than elsewhere.

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Joseph Le Conte left posterity an indelible picture of this tree. "Of all the trees of the Grove, and, therefore, of all trees I have ever seen, the Grizzly Giant impressed me the most profoundly; not, indeed, by its tallness or its symmetry, but by the hugeness of its cylindrical trunk, and by a certain gnarled grandeur, a fibrous, sinewy strength which defies time itself. The others with their smooth, straight, tapering shafts towering to a height of over two hundred feet seemed to me the type of youthful vigor and beauty in the plentitude of power and success. But *this*, with its large, rough, battered trunk nearly thirty feet in diameter—with top broken off at a height of two hundred and four feet, with its great limbs six to eight feet in diameter, twisted and broken—seemed to me the type of a great life, declining but still strong and self-reliant. Perhaps my own top with its departing foliage made me sympathize with this grizzled giant; but I found the others, too, standing with hats in hand and gazing in silent, bare-headed reverence upon this grand old tree."

The size of the Grizzly Giant is sufficient to stimulate the mind to silent musings. Often this leads to "cord wood contemplations," for the mind, in attempting to realize the prodigious amount of timber such a stem might contain, is naturally apt to associate unknown quantities with known. Ordinarily, a statement on the size of this tree, if unsupported by other known

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comparison, is of little import. That it requires a short journey to walk around it; that twenty people can hardly encompass its girth touching hands; that fourteen horses, head to tail, can just encircle its base, serve to visualize the measurement. If it were pierced by a lofty arch, two street cars, side by side, could pass through it; or, if it were hollowed out into a round room with a row of seats cut out of the solid heart wood, a round table could be set in the center and fourteen guests could be seated about it with uncrowded ease. If it were cut into lumber, two hundred cords of firewood and over half a million board feet* could be obtained from its trunk, while its shattered crown would still lie untouched on the forest floor, a beautiful rosy red and emerald ruin awaiting the coming of some all-devouring forest fire.

The Grizzly Giant has long been the subject of much unpardonable exaggeration by popular rhapsodists. There is little doubt but that this tree, presumably the most ancient thing endowed with life on the planet, may fairly claim an almost fabulous antiquity. It has escaped the usual accidents to which the Sequoia is heir, and, as a result, has attained a longevity that far exceeds the ordinary life-span of the species.

*Computations made at the ground, thirty-one feet, give over three-quarters of a million board feet; while those made eleven feet above, where the diameter is but twenty feet, give only a quarter of a million feet of lumber. The figure given above is, therefore, a fair one. Random statements that this tree contains a million board feet of lumber rest on no substantial basis.



MARIPOSA GROVE

Photo by H. S. Hoyt

GRIZZLY GIANT, THE ETERNAL TREE

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Since this is known, the age of the Grizzly Giant can be stated approximately. Its exact age, however, can never be ascertained until the annual rings of its trunk are counted, and this cannot be accomplished without felling the tree.

Nor is it possible to determine the age of a Sequoia merely from its diametric measurement. Up to the present century there prevailed a common belief that this could be done and that great size was indicative of great age. If a tree measured ten feet in diameter, the supposition was that another of the same species twice as large would, accordingly, be twice as old. However, Dudley, who spent many summers in the logged areas of the Converse Basin, found this to be untrue of the Sequoia. One tree thirty-nine feet in circumference proved to be 2,171 years old; while another twice its circumference, or nearly eighty feet, was 1,510 years old.

From a close study of various age classifications, it was believed that the annual growth could be calculated. But even this method has been found unreliable. After a careful study of various ages, Jepson determined upon an average basis of twenty years of growth to every inch. The unfortunate tree in the Calaveras Grove which was ruthlessly cut down that its stump might serve as a dance floor had a diameter of twenty-seven feet, exclusive of bark. Thus, its computed age would have been 6,480 years; whereas, its true age was but 1,300 years. Not-

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withstanding the impossibility of determining the age of a Sequoia from its diametric measurement, the ages of a representative number of felled Sequoias are definitely known. From these it has been possible to ascertain that the average age of the tree is between 900 and 2,100 years. The oldest Sequoia found by Dudley showed 2,425 annual rings, while the most ancient tree logged thus far in the Converse Basin had an age of 3,148 years. John Muir counted over 4,000 rings on a "majestic, old, fire-scarred monument" in the Kings River forest. These are the oldest trees of which science has definite record. Consequently, it would not be rash to estimate the age of the Grizzly Giant at 3,000 years. Figures, however, of 8,000 years and more are assuredly absurd and fabulous; and yet, they are given by several authors of credit, and by a distinguished authority on fishes in particular.

A pile of stones that has looked upon great events possesses an indefinable something that stirs the mind profoundly, lifting it to a higher level of feeling. Byron touched the keynote of this sentiment when he spoke of the "mountains that looked upon Marathon." Feeling the need of some witness of that event, his imagination vested those blind mountains with sight. Likewise, in beholding the gathered companies of crag and spire from the summit of Mt. Whitney, Clarence King was overwhelmed with a sense of the power and tragedy of geological struggle.

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Feeling that this splendid mass of granite was contemporaneous with great events, he endowed it with a quality of consciousness. Yet how infinitely more sublime is this feeling when the object is a living thing. What changes have occurred on the earth since the tiny seed of the Grizzly Giant sent down its first threadlike roots to the mineral soil! Thirty centuries are spanned by its life. Even at thought of this the mind teems with images and memories of events that have transpired during the life and growth of this single tree, it endows the blind yet living column with sight, places it upon some lofty height, and imagines that far below it sees "the far-winding path of human progress, from dim Cimmerian shores of prehistoric shadow into the fuller yet broken and fitful light of the modern time."

The great white race which dominates the world today had made its entrance on the stage of history when the Grizzly Giant began its existence. And within the lifetime of this tree, this race, known as Indo-European, has made vast and noble contributions to the culture of man. Indeed, most of the triumphs of truth and genius over prejudice and tradition in every decade since have been the triumphs of these gifts of the Indo-European peoples.

Drifting southward tribe by tribe from their grassland homes between the Danube and the Black Sea, these ancestors of the present people

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of Europe, came into conflict with the first civilizations four or five thousand years ago.

Among the first to be victorious were the Persians. These barbarians fell upon the effeminate city-dwellers of the Tigris and Euphrates Rivers, reduced the conquered to slaves and set themselves up as the aristocrats of the land. But civilization conquered them and they became refined, lost their original hardihood, and were, in their turn, conquered by other barbarians who, too, became civilized. These were the Greeks under Alexander the Great. They infused new blood into the stagnant pools of culture they found in the Orient, and the product was Hellenism. But Greece, too, fell into a decline and came under the dominion of Rome, whose stability, organization, and power advanced culture again. At length Rome grew weak like the others, and became unable to defend herself against other roving hordes of Indo-Europeans. Fortunately, however, she preserved this precious thing known as civilization long enough for the barbarians to respect it and enabled the Christian Church to shelter it during the Dark Ages. Such is the drama of the growth of civilization which occurred on the earth during the time when the Grizzly Giant was making its patient climb toward the sun.

The greatest empire of the Bronze Age, Egypt, had fallen; Babylon showed evidence of decay;

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Palestine was at the zenith of her career; and Homeric Greece was laying the foundation for classic Greece, when this oldest of trees was sprouting from its tiny seed, unpacking its tender leaves, and taking its first feeble hold on life. The Trojan War (1194-1184 B. C.) was a very recent event, for prosperous and wealthy Troy had been destroyed by a few Greeks who resented her commercial rivalry. Homer was not yet born, hence the epic of the burning of Troy and the rescue of a beautiful woman had yet to be written by this poet of supreme genius. The Hebrew nation had not reached its golden age under Solomon, but David had vanquished the Philistines, united his people, driven the Canaanites out of Jerusalem and made himself King of an extensive empire. This, then, was the status of the civilized world around 1100 B. C. The code of Hammurabi was already more than a thousand years old; the Great Pyramid of Gizeh was almost as old as the Christian religion is today; the Great Wall of China had nearly nine hundred years to wait before its first stone would be laid (214 B. C.); while Rome, the Eternal City, lacked over three hundred and fifty years of its traditional founding (753 B. C.)

While the Grizzly Giant was a sapling, a Sequoia of awkward and ungainly mien, bushy, bent, and crooked by the weight of winter snows, the Assyrians were gaining a great ascendancy in the East. They had developed war

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to a high point of perfection by equipping an army for the first time with iron weapons and chariots drawn by horses. "Whenever they swept through a land they left a trail of ruin and desolation behind. Around smoking heaps which had once been towns, stretched lines of stakes on which were hung the bodies of rebellious rulers flayed alive; while all around rose mounds and piles of the slaughtered heaped to celebrate the great King's triumph. Through the clouds of dust rising along the main roads of the Empire men of the subject kingdoms beheld great herds of cattle, horses, asses, flocks of sheep and goats, and long lines of camels laden with gold and silver, the wealth of the conquered, converging on the palace of Nineveh. Before them marched the chiefs of the plundered kingdoms carrying the severed heads of their former rulers about their necks." And mothers prayed then as now that there would be no more War.

While the Grizzly Giant was yet a youth, the Persians gained the lordship of the East and lost it later to Alexander the Great. Greece, under Pericles, raised human culture to the highest pinnacle yet attained; Herodotus founded history; Buddha saw his vision of the serenity of the soul; Confucius left to posterity his code of personal conduct. During this fruitful period of man's advancement, the Grizzly Giant had become conscious of its destiny and had begun to aspire heavenward and attain its place in the

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sun. Having a form of conical perfection, it was very aristocratic in its trimness. Densely clothed with-short whip-like branches from base to tip, it gradually arose in fringed growths which narrowed pyramid-like toward the sky with charming grace. Other trees show their trunks and knotted boughs, but this tree was compact like a Sequoian cone, and permitted no branch to be seen. Its foliage was of the most exquisite fineness, resembling a series of morning-glory blossoms strung on a string, and forming the softest of forest scenery. The tree had a suppleness which, compared with its present-day rigidity of old age, was as sensitive as the leaves of the quaking aspen.

When it reached the glory of prime and attained the lusty strength of maturity, it had lost its youthful characteristics and assumed the nobility of the Sequoia. Having shed the purplish, leaden-gray, flaky bark of early years, it had taken on the deep red, fibrous bark that distinguishes its royal nature. Having also discarded all of its lower branches, it disclosed a straight, regularly tapering trunk fluted with long parallel furrows. This great shaft, both inspiring in its height and uplifting in its stateliness, supported a magnificent dome-shaped crown. In this sumptuous top a multitude of tiny cones ripened annually and sent forth myriads of golden-winged seeds on the Autumn breezes. Soaring now above all the lesser trees of the forest, it lost its desire to go

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yet higher. Serene and grand, this king of trees presented that "perfect combination of beauty, strength, and grandeur which marks it the noblest of God's trees."

At this time Imperial Rome, sitting on her seven hills, was the center of the world's culture, its progress and power. Rome had enjoyed two centuries of peace—the longest period of order and prosperity mankind has ever known—and had reached her greatest territorial extent under Hadrian (138 A. D.) Julius Caesar had destroyed the Republic; Augustus had founded the Empire; the Star of Bethlehem had proclaimed the Birth of the Saviour; Palestine had become a holy land; the world had received the Christian conception of the dignity of labor and the brotherhood of man, and Calvary had witnessed the spectacle of the Crucifixion. Already Nero had inaugurated Christian persecutions by illuminating his gilded palace with human torches, and the Cross had begun in earnest its conquest of the world.

When Alaric knocked at the Gates of Rome, the Grizzly Giant had arrived at full maturity. Its base had become greatly enlarged, the better to bear up its great weight; while its crown had grown more open, displaying enormously large, gnarled, and knotty branches, each bearing a dense mass of blue-green foliage that melted impalpably away into the sky like vagrant shreds of clouds.

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And from the Fall of Rome to the present day, the Grizzly Giant has passed through maturity and on into life's late afternoon shadows. It first saw the light of day when European civilization was in its dawn and has continued apace with its progress, the epitome of the advancement of the Indo-European peoples. Empires have risen, reached the zenith of their power, and passed on to decay and oblivion within its life time. Nations have succeeded Empires, and these, too, have been followed in their turn by other world powers, like meteors in the sky of history, and this aged monarch has reigned on. Like some ancient thing of the dead ages, it seems to have been forgotten by death so that it might live on until the sun is a burnt-out cinder in the sky.

Impassive, resolute, and self-possessed, it stands unmoved and unaffected by the world about it, unconcerned with its pompous shams, its trite pride, its hollow vanity. Grizzled and picturesque with age, it still clings to life with sublime tenacity. The lightnings of countless clouds have failed to take its life; the snows of a thousand winters have shattered and broken its royal crown; the storms of over ten centuries have stripped it nearly bare of its bark and have mercilessly washed the soil from its roots, while the insect foes and fungi pests of three thousand years have left it as unharmed as fitful winds leave the heavens. The oldest living thing, triumphant

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over tempest and flame, verdant and fruitful, giving shelter to all seekers thereof, and sending forth flocks of singing feathered creatures annually from its great crown like its own flocks of winged seeds from its cone, the Grizzly Giant stands—content.

CHAPTER VII

A BLOSSOM OF DECADENCE

IS the great Sequoia a tree that dreads tomorrow? This mournful question was raised over a half century ago by prominent naturalists of the period. Imbued with the idea that all living things have their day in this world of evolving forms of life, they were unable to see a future for a tree whose race has played so large a role in the past.

Acquainted with the northern groves where the Sequoias are nearly all aged, they could see in them only pitiful, fast-dwindling stands desperately huddled in patches where environment insured conditions ideal for tree life. This they accepted as evidence that the Sequoia stood at the brink of extinction; that it had outlived its day of vigor and progress, and was but a race in its dotage. The surviving remnants were hardly more than a faint echo of past glory, displaying "the munificence of departing greatness" but expressing, as a race, a blossoming of decadence.

Among the first to sound this note of alarm was Asa Gray. Addressing a meeting of the American Association for the Advancement of Science in 1872, he stated: "The *Sequoia gigantea* of the Sierra exists in numbers so limited that the

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separate groves may be reckoned upon the fingers, and the trees of most of them have been counted, except near the southern limit, where they are said to be more copious. A species limited in individuals holds its existence by a precarious tenure, and this has a foothold only in a few sheltered spots of a happy mean in temperature and locally favored with moisture in summer. Even then, for some reason or other, the pines, the firs, and even the incense cedars possess a great advantage and wholly overpower the Sequoia in numbers. Seedlings of the big trees occur not rarely, but in a meagre proportion to those of associated trees; and small, indeed, is the chance that these seedlings will attain to 'the days of the years of their forefathers.' The force of numbers eventually wins. Whatever the individual longevity, certain if not speedy is the decline of a race in which a high death rate afflicts the young.

"In the commonly visited groves *Sequoia gigantea* is invested in its last stronghold, can neither advance into more exposed positions above, nor fall back into drier and barer ground below, nor hold its own in the long run where it is under the present conditions; and a little drying out of the climate of the region, which must have been much moister than now, would precipitate its doom."

Man, seemingly, has conspired with Nature in bringing the Sequoia under the inexorable law of

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extinction. He lacks respect for this priceless heritage of earlier ages, for already many of the most magnificent stands of the Sequoia have been logged. If commercialism is allowed to go its wayward way unchecked, posterity will soon be robbed of these last remaining remnants of the forests of the Miocene. Even now man is bringing the age of Mammals to a close. Soon there will be no wild life left except in those spots that are given protection. Outside of these areas, all life will be destroyed save those plants and animals that have been reclaimed from the wild. Then man will stand alone and unchallenged amid the wreck of creation.

Happily, this melancholy cry is not the expression of an actual fact, at least, so far as the Sequoia is concerned. Enough Sequoian tracts have been made safe from the axe to insure the future of the race and to prevent ultimate destruction at the hands of man. Nor is the tree in danger of natural extinction if the salvaged Sequoian tracts reproduce in sufficient numbers to continue the struggle for existence. If this can be proved to a reasonable certainty, then the Sequoia, as a race, is not fated to be without descendents.

Unlike the Redwood of the coast, the great Sequoia of the Sierra does not reproduce by root or stump sprouts, but from seed only. The seeds are in cones exceedingly small for so colossal a tree, being hardly larger than a small egg. These

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ovule bodies are composed of thirty to forty closely packed, woody, persistent scales, each with four to six seeds at its base. Two years are required for the cone to mature, and by early Autumn of the second year their olive green, purplish color has faded to a dull yellowish brown, the cone has shrunk and the scales parted sufficiently to liberate its seeds to the wind. So insignificant looking are these tiny seeds that few fail to marvel that they should contain the actual germ which produces the largest inhabitant of the world's forests. But the size of a mustard seed, with membranous disk-like wings, they are so light that they make a sound almost imperceptible to the human ear in their glancing and wavering fall to the forest floor.

Not less impressive is the abundance of these seeds. Over three hundred are contained within each cone. John Muir counted on two ordinary specimen branches over four hundred and eighty cones containing at least one hundred and forty thousand seeds. This led him to state that "millions of seeds are ripened annually by a single tree, and in a fruitful year the product of one of the northern groves would contain enough to plant all the mountain ranges of the world." Surely, the cone of the Sequoia presses closely upon the classic pomegranate in the number of its seeds and may well be considered the symbol of abundance.

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During the droning days of Autumn when the air is freighted with a calm, serious stillness, and a thousand wild creatures are occupied with tasks that fulfill an instinctive provision for a coming want, the squirrels are busy gathering the Sequoia cones, small as they are. Throughout these quiet days the sound of their dropping may be heard and grey-furred bodies may be seen coming down the great red trunks with nervous, jerky vehemence—trunks whose bark has known the tiny feet of others of their voluble kin decades ago. Securing the cones they have cut down with their "ivory sickles," these diligent little harvesters store them away for winter use. Often forgotten, these cones, buried at the proper depth for germination, become the means of further perpetuating the race of the giants.

Other creatures, too, are laying up provisions for the winter. Birds are amazingly industrious. Some are gathering with much fuss into flocks preparatory for southward flight, while others, with thoughts of chill days to come, are busily searching out every cranny for a morsel of food, mere atoms against the huge, lofty trunks. Blue-jays are indulging in their usual pilfering, making more noise than all the rest of the forest folk combined. Insects also seem unusually active. Happy, gauzy-winged bits of concentrated gayety, they:while away their little hours in the mellowed sunshine. Giving no thought to the frosts and short days to come, transitory and

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carefree, they offer the most tragic contrasts, dancing and humming about the immortal Sequoia.

When winter comes and all is in keeping with the great sleep of the forest, it is blossom time for the Sequoia. For everything else the beauty of life's expansion is ended. The pines have become funereal in their aspect; the firs have lost their gayety. The underbrush, bowed with the weight of snow, is stripped of its bright leaves. Sear and brown, they lie heaped in hollows where the wailing Autumn winds left them. The flowers, too, are in their graves. The robins are gone. Even streams are silent and buried. But the Sequoia, living an almost enchanted existence, is quite beyond reach of every influence suggestive of winter's repose. Though all life about it may cease, it must blossom forth. Producing myriads of minute flowers at the ends of branches formed the previous year, it fairly bursts into bloom, dusting the snowy ground, like a gigantic goldenrod, with golden pollen.

Contrasting the prolific abundance of Sequoia seeds with the scarcity of seedlings, it seems logical to conclude that the Sequoia is not reproducing. It is true that seedlings are rare in the northern groves, although seed production there is as great as elsewhere. This has been construed as evidence that the seeds are infertile and bears out the sad prophecy of Asa Gray that the Sequoia is a wan and weary survivor of the Age



MARIPOSA GROVE

Photo by A. C. Pillsbury

ALABAMA TREE, A PERFECT SEQUOIA

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of Reptiles and has that inferiority about it of all things that go back into the past. Tainted with antiquity, it is supposedly losing its power of reproduction.

The southern groves, however, throw quite a different light upon the question. There reproduction is manifest on every hand. Companies of seedlings are springing up everywhere determined to carry on the noble line. They are found growing not alone in moist glens where the soil is rich and deep, but also on rocky ledges and steep hillsides seemingly bare of all nutriment, some even battling for life with their roots wedged in crevices of granite beds. Exuberant and heavy with an output of green foliage, these monarchs of the future promise anything but an inability to maintain the forest in its most perfect vigor.

The fact that the Sequoias in the northern part of their range show lack of reproduction is not due to a loss of viability of their seeds, but to other causes. Wherever the thick layer of leaf mould is stripped away exposing the mineral soil and the proper amount of sunlight is sifted down, plantations of thrifty seedlings promise renewal of the race. But where the overhead shade is unbroken and the litter on the forest floor undisturbed, the seedling succumbs long before its tiny roots can reach down through the decaying vegetable matter to the soil beneath. In the southern groves where the ravages of the lumber mill and fire have been extensive enough to open

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up the dense shade, tearing the ground and baring it to the sunlight, the Sequoia has displayed an admirable ability to seed over the desolated areas. But in the northern groves where sunlight and soil conditions are unfavorable to the development of seedlings, reproduction is practically at a standstill.

In the Calaveras Grove Sudworth found a few seedlings "where storm had made an opening in the forest and a ground fire had exposed a little mineral soil. Apparently good use had been made of the first opportunity for reproduction," he goes on to state, "for young big trees were vigorous in the full enjoyment of the sun." The same may be said to be true of the Mariposa Grove. Reproduction, as a whole, is always evident when proper conditions obtain, for numberless seedlings may be found growing on spots bared of the forest litter and open to the sun. With continued protection these bid fair to replace the old giants of the present.

It is also of interest to note that seedlings are the exception throughout the Redwood belt. This is not due to sterility of the seeds, but to the same causes which have conspired in Big Tree forests to prevent reproduction. The dense shade and the heavy ground litter present conditions most unfavorable to germination. Indeed, were it not for the Redwood's unique habit of sprouting shoots from stumps and old roots, they, too, would be as completely splendid in their poverty

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of young trees as the northern groves of the Giant Sequoia.

The causes, then, of the death of seedlings, especially in the northern parts of the Sequoia's range, are not, as was first commonly supposed, due to the drying out of the climate, the loss in vitality of the race, or the fact that the Sequoias are being vanquished by competitive and more lusty species. Given favorable soil and light conditions the tree "still possesses that strong inherent reproductive power that permits survival of the fit."

It is true that the Sequoia has not extended its range since post-glacial time. If it has, the monuments of its extension have remained no more enduring than those left by departed bees and butterflies, for in the gaps between the Sequoia groves, not a root-hole or a trench made by a falling giant has been discovered. The fact that such records are well nigh imperishable, taken in conjunction with their abundant presence in the groves themselves, led John Muir to conclude that their absence outside is indicative of the non-extension of the species beyond its present limits since the glacial period that gave the Sierras their aspect of savage grandeur. Before this epoch, however, it is believed that the Sequoia extended in an unbroken belt along the Sierra and that the present-day gaps mark the paths of these great ice rivers. In fact, wherever the glaciers once wore their bodies into the

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canyons, the Sequoia is found wanting. And though the tree has not re-united its broken clusters, it has held its own ground against rival species. John Muir took this as evidence that the Sequoia exhibited no decadence since the glacial period.

The unequivocal conclusion to be drawn from these facts is that the Sequoia is in no danger of extinction. It has not lost the original hardihood of its race. Nor is the present but the epilogue of the imposing part it has played in the past—it is the augury of a yet more splendid future awaiting a race whose ancestors reach back into the borderland of the forgotten ages.

PART THREE

Naming *the* Sequoia

CHAPTER VIII

A NAME FOR THE AGES

THE infinite deal of trivial fussiness that has clustered about the botanical name of the Giant Sequoia is, indeed, a grievous misfortune. The tree must regard it all with consummate unconcern. Alone with the past and having a dignity not of earth in its mien it stands as indifferent to agitation that has to do with the petty passions of humanity as the far-away patient stars. Suggestive of no strife save that of emulation, it looks with complacent disdain upon life's vanities; its strange medley of littleness and greatness, its commingling of folly and wisdom. Yet for all the great Sequoia's majestic aloofness, its name has become embroiled in endless bickerings and surrounded with technicalities apt to nip any budding enthusiasm for botanical nomenclature.

In order to avoid interminable confusion it is necessary that the plants of the earth be systematically classified and that there be no deviation

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from the rules governing their classification. Foremost of the rules that have been laid down is that of priority. This dictates that the first name given a new plant in point of time must prevail. If contention or ambiguity arise, priority decides the case, and the first botanical designation bestowed stands for all time, regardless of whether it be appropriate or not. Designations of a subsequent date are entitled to rank as synonyms only. Because of its rigor, this law should admonish botanists to exercise good taste in giving scientific names to hitherto unnamed plants. Another important rule is that the name of the new plant must appear in an accredited publication, otherwise it is technically regarded as unpublished and consequently discarded.

Shortly after the discovery of the Calaveras Grove, the tale of its wonderful Big Trees found its way into print. The *Sonora Herald* appears to have been the first newspaper to give an account of the Giant Sequoia. This was republished in the *Echo du Pacific* of San Francisco, appearing later in the London *Athenaeum* of July 23, 1853. Whitney believes the latter to be the first notice of the tree to appear in Europe.

Naturally, these accounts excited botanists. Specimens of the Big Tree were presented to the California Academy of Sciences in San Francisco early in 1853. Unfortunately, however, the Academy was unable to properly describe the new plant, since it had no references on hand

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which would enable its botanists to publish a proper scientific description of the mammoth tree. Specimens were subsequently sent East to Torrey and Gray, but again ill fortune attended them and they were lost in crossing the Isthmus of Panama. Meanwhile, William Lobb, an English seed collector, on seeing specimens of the recently discovered vegetable wonder, believed he recognized a species new to science. He secured a sufficient quantity of Sequoia cones, foliage, and wood to characterize the tree and departed for England in the Autumn of 1853. These specimens found their way into the hands of Lindley, who hastily described them in Gardner's *Chronicle* of December 24th, of the same year. Thus Lindley, a botanist of no particular eminence, was the first to give a scientific description of the Giant Sequoia, and American botanists lost both the opportunity and honor of naming a very remarkable plant.

Overlooking the close relationship of the Big Tree to the already scientifically described Redwood, Lindley considered it "an entirely new coniferous form . . . an evergreen of a most imperial aspect," which he called *Wellingtonia*, adding the specific name of *Gigantea*. The Duke of Wellington had been dead but a year and his greatness had not yet gained the perspective of historical time; hence, Lindley's designation. "We think," he wrote, "that no one will differ from us in feeling that the most appropriate

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name to be proposed for the most gigantic tree which has been revealed to us by modern discovery, is that of the greatest of modern heroes. Wellington stands as high above his contemporaries as the California tree above all the surrounding foresters. Let it, then, bear henceforth the name of *Wellingtonia Gigantea*."

In bestowing on an essentially American tree the name of an essentially English hero, Lindley showed execrable taste. He might have foreseen that such an act was almost certain to fire those who felt a consuming contempt for anything British. Promptly the fine rules of botanical nomenclature were thrown overboard, and Americans, eager to make a self-righteous display of their enmity, proceeded on no principles, and with terrible energy of language, to disturb the designation. Gradually the agitation centered upon changing the name *Wellingtonia* to one bearing reference to Washington. Nor was any evidence brought forward considered too trivial to substantiate the reasons for this change.

Perhaps the most withering rebuke of all was that of Winslow. In the *California Farmer* of August, 1854, appeared the following: . . . "as Washington and his generation declared themselves independent of all English rule and political dictation, so American naturalists must, in this case, express their respectful dissent from all British scientific stamp acts. If the Big Tree be a *Taxodium*, let it be called now and forever

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Taxodium Washingtonium. . . . No name can be more appropriate; and if, in accordance with the views of American botanists, I trust the scientific honor of our country may be vindicated from foreign indelicacy by boldly discarding the name now applied to it, and by affixing to it that of the immortal man whose memory we all love, and honor, and teach our children to adore."

Even Asa Gray felt entitled to rush into the field. In September of the same year he published, on his own authority, an account stating that the Redwood and the Big Tree did not differ sufficiently to warrant the establishment of a new genus; adding "The so-called *Wellingtonia* will hereafter bear the name imposed by Dr. Torrey, namely, that of *Sequoia Gigantea*." But since there is no documentary evidence to show that Torrey had published this description, the quibble remained unsettled. The English stood at their guns and the storm raged on. Surely, if so venerable a *Sequoia* as the Grizzly Giant could have been endowed with a consciousness and could have thought about this ostentatious parade of pettiness, it would not have been inspired with that "high and ennobling sense" of the intellectual destiny of the human race.

Happily, the issue was quieted for a time.* At a meeting of the Societe Botanique de France, held on June 28, 1854, the illustrious French

*The interesting question raised by Sudworth in 1898 whether the specific name should be *Gigantea* or *Washingtonia* is discussed in Bulletin Number 17, U. S. Forest Service, Page 28.

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botanist, J. Decaisne, discussed at length the relationship of the Redwood and the Big Tree. He pointed out that though they differed in leaf structure, the former having yew-like leaves in two ranks, the latter small, scaly, cypress-like leaves in regular spirals, the two species belonged to the same genus *Sequoia*. Therefore, in compliance with the rules of botany, he called the new species *Sequoia Gigantea*. Other botanists quickly recognized the correctness of his view, and *Wellingtonia Gigantea* was permitted to fall upon evil days. Nevertheless, it is due to this accident of the generic agreement between the Redwood and the Big Tree that the Giants of the Sierra bear the name of *Sequoia* instead of that of *Wellington*.

But this botanical storm had no sooner died down than another developed in its place. Inasmuch as the derivation of the name *Sequoia* was uncertain, this was sufficient provocation to call forth much diversity of opinion. Again spectacled wise men sought to satisfy their passion for exactness and their propensity to doubt. Guesses fantastic in the extreme were advanced and the subject presents another silly spectacle of pedantry.

According to Jepson, the Redwood was collected by Thaddeus Haneke in 1791. Archibald Menzies, a member of the famous Vancouver Expedition, is reputed to be its second botanical collector. Specimens of his collection came before the notice of Lambert, the able English

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botanist, who, considering it as of the same genus as the Bald Cypress, published it in 1824 as *Taxodium Sempervirens*. However, this designation was not allowed to stand, for twenty-three years later the Redwood was recognized as a distinct genus. In the year 1847 the celebrated Austrian, Endlicher, established the genus *Sequoia* and gave the world the now well-known *Sequoia sempervirens*.

Unfortunately, Endlicher failed to make a statement concerning the origin of the word *Sequoia*, leaving its meaning to be inferred. Gordon in his *Pinetum* stated that it was probably derived from the Latin for "sequence," alluding to the fact that the Redwood was "a follower or remnant of several extinct colossal species." Kotch was inclined to hold the name in light estimation, claiming its source to be entirely fanciful. De Cancellolle, a contemporary with Endlicher, thought it of California origin, probably taken "from some native word and written more or less correctly." But others have kept their heads better in the matter. Both Hooker and Englemann believed it derived from the Cherokee Indian, Sequoyah. At least, it is edifying to know that Endlicher was an eminent linguist as well as a botanist. It is not improbable, then, that he was acquainted with Sequoyah's colorful career and named the tree in honor of this aboriginal illiterate, this magnificent savage, who groped in darkness to give his people letters, and found the light.

CHAPTER IX

SEQUOYAH

HAD Sequoyah lived thirty centuries ago, Plutarch, and after him Shakespeare, would have made him immortal. Had he invented an alphabet then, similar to that which he invented for his people, the Cherokees, he would have been hailed as one of the benefactors of the human race. But as it is, the world's knowledge concerning his achievement may be said to sleep. The records of his life are hidden from the average reader, while his fame is suffering the fate of many worthy of antiquity—perishing from memory for want of an historian. Already the twilight of uncertainty is throwing its shadows across his history.

Yet no savage is more worthy of remembrance. The life of Sequoyah was radiant with the prime quality of greatness—*virtue*. It is true that mankind admires the men and women of the past who have spoken great words, done great deeds, and suffered noble sorrows. Few of these, however, possess that quality of virtue which inspires emulation. Indeed, only those whose names are written in gold on the sombre chronicles of the past inspire to imitation. Sequoyah's achievement easily entitles him a place among the great characters of all time, while his life of service

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stirs a strong desire to emulate, for he strove to save his unhappy race from extinction in the noblest way a savage ever sought.

Despite this, his name and fame go untrumpeted and unsung. Meanwhile mankind is frantically fashioning statues to rest idly on pedestals, or building magnificent edifices whose marbles glisten in the sunlight, in commemoration of men of frailer virtue. Yet Sequoyah's name is borne by apartment houses and tomato cans. Apparently it remains for the most gigantic and remarkable tree on the surface of the globe, the Sequoia, to save his name from oblivion and to attempt to correct the indifference of a so-called superior race.

Authorities are agreed that the birth, breeding, and fortune of Sequoyah were low and that his greatness rested on a life of labor. They are in disagreement, however, as to the date and place of his birth, and have been able merely to offer conjectures concerning his parentage. These mists of uncertainty that surround Sequoyah's earliest years are, undoubtedly, due to conditions of early frontier life.

The fur trader, who represented the outer edge of the advancing wave of European civilization, was the first to penetrate the American wilderness in his exploitation of beasts. Early in the settlement of America he entered the country of the Cherokee which then embraced the beautiful reaches of the southern Appalachians. The

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Cherokees received the trader with hospitality and kindness, and a lucrative traffic in furs soon resulted; the trader offering professions of regard and extracting exorbitant profits. To better secure the faith of the savage, thereby insuring the success of their venture, many of these traders married Cherokee women. Some, fascinated by this wild life of freedom, reverted to savagery and became "squaw men," but the great majority adopted this method of wife-taking to avoid a bill for board and lodging, and then speedily disappeared as soon as their trading enterprise was over.

An episode of this nature occurred just prior to the termination of the French and Indian War. Of the married life of this couple there is little record. It is quite certain, however, that it was of short duration and that the trader concerned gathered together his effects and went the light-hearted way of other traders before him, and was never heard of again. The babe born to this deserted mother soon afterwards was called by the Cherokees George Gist, presumably the name of the father, while the mother bestowed upon the infant the more musical name of Sequoyah.

Tradition has it that the mother of Sequoyah was a woman of no common character and energy. To the end she remained true to her faithless husband and lived alone, maintaining herself by her own efforts and caring for her babe with a devotion



SEQUOYAH

From original painting made in 1825

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that would put many of her more polished sisters to shame. Unaided, she cleared a little patch, carrying her babe about while she broke the ground with a short stick and planted it with Indian corn. "That she is a woman of some capacity is evident from the undeviating affections for herself which she inspired in her son, and the influence she exercised over him. This is all the more extraordinary since Indian women are looked upon in the light of servants rather than companions of man, and males are taught early to despise the character and occupations of women." But with Sequoyah it seems to have been otherwise, for he carried a lofty respect for his mother to the grave.

As a babe, it is said that Sequoyah had an air of infantile gravity about him which was emphasized by a contemplative light which shone in his little black eyes. As a boy he was much alone and thoughtful, having no fondness for the rude sports of others of his age. He preferred to assist his mother rather than to become proficient with the bow. It is said that he occupied his boyish leisure carving milk pails, skimmers, and other useful objects, displaying at this early age the mechanical side of his genius. He even milked the few cows with which fortune had favored his mother, and on occasions aided her in her labors in the field. This failure to scorn a woman's pursuit and trim his sail to the unchanging breeze of Indian tradition only

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brought down on him a torrent of abuse from grey-beards and caused youths to rail at him like chattering birds. Young Sequoyah, however, calmly and silently bore all this disgrace and followed the dictates of his reason with unflinching gravity—a characteristic he displayed throughout his life and which some hold as the keystone of his greatness.

When Sequoyah attained manhood's estate, the Thirteen Colonies had won their independence, and Daniel Boone had led the first settlers into the blue grass country of the Cumberland. In these times the English, French, and Spanish hotly vied with each other for the control of the valuable fur trade of the "Old Southwest," and their pack-trains threaded their way out of Cherokee country in unceasing strings, bearing the rich peltry of the wilderness. In this work of destruction of wild life the Indian had innocently come to play, by far, the major role. Nor is it altogether improbable that Sequoyah, who by now had become a hunter, aided in the extermination of the buffalo that still lingered in the valleys of the Ohio and the Tennessee.

It is also likely that Sequoyah would not have escaped the degradation into which the red man was falling had not an accident befallen him while hunting which rendered him a cripple for the rest of his life. The coming of the rifle, a new and powerful sinew of war, and of the chase, brought in its train a hopeless dependence on

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unscrupulous traders for powder and lead. The introduction of whiskey further conspired in the ruin of a proud people. Drinking had become the pledge of cordiality on the frontier, and Sequoyah had become as much addicted to the vice as his fellow hunters. Later events proved that Sequoyah possessed an intellect elevated above the sphere in which it was placed. Had he not become a cripple, however, it is doubtful whether he would have meditated upon the decaying fortunes of his race, which meditation led him to make his remarkable invention. Thus, paradoxical as it may at first appear, misfortune often precipitates a chain of events that ultimately end in accomplishment of great import.

Unable to follow the pursuits of manhood, Sequoyah now faced the humiliation of donning petticoats and of performing the servile labors of woman's lot among the Cherokees. Such a prospect would, indeed, have broken the spirit of an ordinary Indian, and especially so if a stain had been affixed to his character such as that which Sequoyah had incurred in his youth by assisting his mother. But it must be remembered that Sequoyah was not of common clay. The traits manifested in infancy and boyhood now stood him in good stead and opportunity was given to bring them to fruition. One trait, an extraordinary mechanical ability, was first pressed into service; the other, a remarkably analytical and philosophical mind, was given leisure in which

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to become mellow, until, in the ripeness of time, it should find its proper exercise.

The Cherokees were a people fond of display. It occurred to the intuitive mind of Sequoyah that an opulent livelihood could be secured in the manufacture of silver ornaments. As a hunter he had visited the white settlements and had seen the blacksmiths smelt ore and fashion trinkets. Endowed with good powers of observation and possessed of an innate skill with his hands, he set to work without the aid of an instructor to make his own bellows and tools. Within a comparatively brief time he became a master in the art of silver working and in the end became such an expert artisan that he developed this art to the highest point attained by the Indians of North America.

Astonished, his people came to gaze upon one of their own race who possessed the skill and ingenuity of the white man. Such uncommon accomplishment merited high recognition. He became a wonder in their eyes. The fame of his handiwork spread far and near, and they flocked to his door, eager to give him employment. Then it was that Sequoyah began to enjoy an unprecedented popularity. Affable, accommodating, and unassuming, having a nature too truly great to be spoiled by the recognition of his superiority, success only nourished the greater qualities within him. The women especially attracted by his skill, bestowed their smiles

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upon him, but, like Alexander, "he found a counter charm in the beauty of self-government and sobriety and on the strength of this passed them by, as so many statues." The braves of the tribe likewise courted his friendship and his shop became the center for male gossip. Since Sequoyah was not lacking in the social graces of his tribe and since the munificence of his table increased with his fortune, he came more and more to spend his time in receiving visitors and in discharging the duties of hospitality. Lastly, even the elders of the tribe sought his favor and welcomed his voice in their councils.

Wishing to identify his wares, Sequoyah employed a literate half-breed, Charles Hicks, to write his name, from which he made a die. With this he stamped his name on all the silver he fabricated. Many of these ornaments remain in the proud possession of the scattered and forgotten remnants of the Cherokees. Prized beyond price, they are a reminder of the glory of the past. Just as the crumbling ruins of antiquity speak of the pride and pomp of yesterday, so do these treasured silver objects remind their possessors of the Golden Age of the Cherokee.

As the years went on, Sequoyah's philosophical nature ripened and he came to ponder on the future of his fast dwindling race. This problem was probably first brought to his attention during the social gatherings held under his roof, for the Cherokees were sensitive to the superiority of

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civilized man and quick to note the cardinal points of difference between themselves and the whites. Often they had wondered at the ability of the white man to "talk on paper." But after considerable inquiry they became convinced that the power of recording and communicating thoughts by means of writing was the product of some mysterious gift which the white man alone possessed. Nevertheless, Sequoyah was unable to dismiss the problem as lightly from his mind as his brethren had done. It was odious to Luther that the devil had all the best tunes; likewise it was odious to Sequoyah that the white man should have a monopoly on the power of written expression. At length he decided that writing was not the result of sorcery, but a faculty of the mind which could be acquired. Hence, he concluded that he could solve this mystery and give his people "talking paper" like that of the whites.

His reflections on this problem were further stimulated by the progress of events. The day of the trader had passed, while that of the settler had come. The swelling tide from Europe had settled around the Cherokees, and the frontier of settlement had begun to continually spill over into the Cherokee country. What was even more maddening, encroachments were on the increase and held no promise of abating. At last in despair, the Cherokees appealed to the "Great Father" in Washington to stem the tide. A treaty followed,

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clipping away a goodly portion of their ancestral domain. The ink on it was hardly dry before another wrested from them still more thousands of acres of rich land. In each treaty the Federal Government recognized the Cherokee claims and titles and solemnly declared it to be "the last and final adjustment of all claims and differences." Obviously, the Cherokees were shocked by these acts of treachery. The fact that the hand of the "Great Father" was gloved and that it purported to throw continual favors in their path did not make them less apprehensive of the menace. Yet they were convinced of the folly of an appeal to arms through a realization of the inequality of the struggle. Therefore, they did that which no other Indian tribe in the face of calamity has ever done. They attempted to combat civilization by becoming civilized themselves. At a great council they organized themselves to form a Federal Union after the United States, and set to cultivating the arts of peace and the ways of civilization.

By this time Sequoyah had become imbued with the idea that the secret of the white man's superiority lay in his power of communication by writing. Indeed, he struck a salient note here, for the invention of writing has made tremendously for the superior advantages of the civilized races over the primitive. "The mind and the pen have ultimately, in all ages, been mightier than the sword. Rome, the conquerer, was led in chains by

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Greece, who, though herself over-run by barbaric Romans, compelled them to adopt, respect, and maintain her institutions." History, in fact, is replete with instances of people who have been able to ward off the effects of conquest because they were intellectually above their victors. But this superiority has always preceded conquest; it has *never* followed it. Unfortunately, Sequoyah was ignorant of this. Nevertheless, the mere fact that such an ideal had its birth in the mind of an untutored savage is sufficient to vest it with sublimity.

Inspired with the thought of saving his people from conquest by giving them the power of the pen, he took up his great work at the age of forty-nine, in the last year of Jefferson's Presidency. Ceasing his labors as a silversmith, he began carving strange characters out of bark and spending hours wrapped in thought. His fellow tribesmen were unable to understand his singular behavior. They thought it but the work of madness for their great silversmith to lay aside his hammer and bellows, to quit his social circle, and of a sudden to become seclusive. Sequoyah, however, refused to reveal his secret, knowing full well the attitude of his fellow tribesmen in regard to the impossibility of discovering a supposedly supernatural power of the whites. His popularity suffered a quick decline, and his friends fell away like leaves from Autumn trees attempting to justify their actions by scoffing



Photo by H. S. Hoyt

THE INVINCIBLE SEQUOIA

The large fire-made cavity in the Haverford suggests the tree's great vitality

MARIPOSA GROVE

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and sneering. Then Sequoyah began to taste in full measure the vinegar of derision and to learn that gratitude is but a lively sense of favors to come. Notwithstanding, he preserved the usual calm behavior and serenity of mind that had attended him from infancy, always turning from the storm without to the sunshine of hope within him. And after twelve years—years of persevering labor and repeated failure—years of ridicule in which his faith in his people must have been sorely tried—he perfected his remarkable invention of the Cherokee Alphabet.

It is a notable fact that the great works of the imagination have usually been produced by men nearly innocent of schooling and scholarship. Homer, Shakespeare, Cervantes, Burns, and Abraham Lincoln were all self-taught men. Sequoyah was an absolute illiterate, yet he invented an alphabet. He had no acquaintanceship with the English language, for he disdained the aid of missionaries, and for this reason the most elemental principles of our alphabet were unknown to him. He reasoned, and with no little correctness, that a knowledge of English would be of no avail because of the peculiarities of the Cherokee language. With his own unaided intellect he fashioned a syllabary so extraordinary that it astonishes even the learned, and proved himself a mental giant. Evidently he did not recognize the stops of the human mind, which is almost wholly imitative. Indeed, some of his biographers are

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unwilling to give him this honor, claiming that his invention was not altogether free from borrowing. But for all that, there are still those who hold that Bacon wrote that which is attributed to Shakespeare. Because man shows an extreme poverty throughout the history of invention, because he rarely tries to do over again that which has been once accomplished, and because he is quicker to grasp and more capable of appropriating, independent inventions are the exception rather than the rule. It must be conceded, in all fairness, that Sequoyah's syllabary was an invention "par excellence."

Having first conceived the notion that speech could be represented by characters or signs and that if these signs were uniform they would convey the idea intended by the writer, he set out to devise a symbol for each word or idea of the Cherokee tongue. His first step, in other words, was in the direction of the simple pictograph. As the experiment progressed, however, his symbols multiplied fearfully, until, at the end of three years he had thousands of them. It would have been almost impossible for the human mind to retain such a complex multitude of signs. Happily, Sequoyah had a sufficient sense of the practical to realize this. Hence, he abandoned this experiment and started again by making a study of the construction of language itself.

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Even a people as cultivated as the Chinese have never made the next stride which Sequoyah took. The Chinese still employ the lowest stage of writing in all its absurd prolixity with the result that long years of study and a memory above the average are required for its mastery. This is largely the reason, too, why intellectual democracy is so noticeably absent in China. The Chinese language is too elaborate in structure, too laborious in use, and too inflexible in form to thoroughly saturate China's teeming millions and to meet the need of a simple, swift, and lucid communication of thought. Our alphabet, on the other hand, answers these requirements. "It is because the Egyptians passed into the glory of the true alphabet that the Phoenicians simplified and improved it, and that the Greeks were able to transmit it to occidental civilization that western nations have been able to make such tremendous mental progress and established such a wide and common knowledge." It is quite obvious that Sequoyah was not blundering when he discarded his pictograph system if he would achieve his ideal.

After long and patient study he began a search for the unity of speech. At length he discovered that *sound* was the key in the construction of language. Then by attentive listening for another period he discovered that the sounds in the words spoken by the Cherokees could be analyzed and classified and could be represented by hardly

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more than a hundred syllables. Further analysis revealed two distinct types of sounds, vowels and consonants. Classifying the sounds according to this division, he found that there were six vowel and seventy-two consonant sounds. Thirty-seventy sounds still remained unclassified. By dint of further analysis he found that these were of a hissing or guttural nature. In an ingenious way he represented the former by seven combinations and the latter by one. As a result, in this expeditious manner he was able to write a copious language vastly wealthier in its vocabulary than ours, with but eighty-five characters.

The best authorities are agreed that our alphabet is, in some respects, the greatest invention of the human mind. Yet it is not the product of a single mind, but the accretion of Egyptian, Phoenician, and Greek wisdom extending over a period of at least three thousand years. Excellent as our alphabet is, it fails to outrank that of Sequoyah in point of felicity and ease of mastery. Ours is superior in that it goes to the unit of speech, *sound*, and has characters that stand for sound. Sequoyah's alphabet had characters that stood for combinations of sounds or syllables. Our alphabet is the only sound-for-a-sign system of writing yet invented. It is an alphabet of letters, while that of Sequoyah was an alphabet of syllables. James Mooney claims that it ranks second to all systems of writing ever known to

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the world. It certainly could not have been the work of other than a gigantic intellect.

It was not without considerable difficulty that Sequoyah induced a few skeptical and superstitious Cherokees to learn his alphabet after he had completed it in 1821. These few who were the first to try it out did so merely to expose the delusions of the alphabet-maker, but as the lesson progressed, though they had come to scoff, they began to admire until, finally, when the lesson was finished they were convinced that the seemingly impossible had been achieved—that the Cherokees could “talk on paper” like the whites. This time Sequoyah’s rise to fame was meteoric. News of his invention spread like wildfire throughout the tribe, and, at a public test made before the assembled Houses of the Cherokee Congress, his alphabet was officially adopted as the means of elevating the tribe. Sequoyah had become the Cadmus* of his nation.

Then occurred a spectacle without a parallel among primitive people; that of gray-bearded savages studying in groups with unfettered zeal in order to become the equal of the white man in knowledge. Almost overnight the entire nation became an academy. To be able to read and write became a craze with the Cherokees. Never was Plato’s fine phrase of a people being “possessed and maddened with a passion for knowledge”

*A mythical Phoenician who brought letters to the Greeks and in whose honor the people of Thebes erected a magnificent edifice known as the Cadmeum.

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better exemplified. Mass meetings in abundance were held and the new method of "talking on paper" was taught virtually wholesale. It was even common to see groups teaching each other in cabins and along the roadside. "Within a few months thousands of formerly illiterate savages, without the aid of schools or the expense of time or money, could read and write." In fact, by the time the Monroe Doctrine was promulgated in 1823, reading and writing had become so general among the Cherokees that "they carried on a correspondence by letter between different parts of the nation and were in the habit of making receipts and giving promissory notes in affairs of trade. Directions were even inscribed on trees indicating the different roads."

This is manifest evidence of the ease with which Sequoyah's syllabary was learned. "In my own observation," states Phillips, "Indian children will take one or two years to master the English printed and written language, but in a few days can read and write in Cherokee. They do the latter, in fact, as soon as they learn to shape letters. As soon as they master the alphabet they have got rid of all the perplexing questions that puzzle the brains of our children. It is not too much to say that a child will learn in a month by the same effort as thoroughly in the language of Sequoyah that which in ours consumes the time of our children for at least two years."

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Sequoyah next paid a visit to the Arkansas Cherokees. This band had separated from the main body when the Cherokees decided to combat civilization with civilization and had moved west where they could enjoy the ancient ways of their ancestors. Though this body had spurned all civilized innovations and had clung slavishly to tradition, strangely enough, they readily seized the new art Sequoyah brought with him and learned it with a zest that almost put their eastern brethren in the shade.

In the Autumn of this same year, 1823, the Cherokee Council publicly acknowledged Sequoyah's service to the nation by sending him through their President, the noted John Ross, a silver medal commemorative of his achievement. So highly had the Cherokees come to esteem Sequoyah's greatness that five years later they elected him to represent them in Washington. There he was cordially received and recognized as an intellectual peer. On this occasion he sat for his portrait. The Treaty of Washington of 1828 reveals that he still enjoyed high favor from the Government, for it provided for a sum to be paid to Sequoyah and his heirs "for the great benefits he has conferred upon the Cherokee people in the beneficial results they are now experiencing from the use of the alphabet discovered by him." It is worthy to note that for many years the Government paid this pension—*the only literary pension it has ever paid.*

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The Cherokees had now passed into a state of semi-civilization. They had a National Congress which had passed laws against intemperance and polygamy. They had a national press and a national newspaper, the *Cherokee Phoenix*. The first copy of this unique paper appeared on February 28, 1828. It was printed in both English and Cherokee by a hand press which had been purchased in Boston, shipped by water to Augusta, Georgia, and then transported laboriously by wagon over two hundred miles to the Cherokee national capital. Such a journalistic record is without rival in primitive society, and the *Cherokee Phoenix* holds the honor of being the father of all aboriginal newspapers.

Rapid strides, economically as well as politically and intellectually, had been made. Many Cherokees had amassed considerable wealth and enjoyed some of the refinements and luxuries of a more polished society. The majority of them possessed herds of cattle, together with horses, hogs, and sheep. Husbandry was so efficiently practiced that some products were actually exported, as evidenced by the large cargoes of wheat and tobacco that were floated on flat-boats down the Tennessee to New Orleans. The manufacture of woollen and cotton cloth had even assumed a productiveness permitting of exportation. In short, prosperity was on the boom and everything augured well for the Cherokees' happy attainment of civilization.

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But fate had willed it otherwise. The Cherokees had reached the zenith of their advance. Gold was discovered in their domain in 1829. This event led to dishonorable deeds of the white man and gave the annals of American-Indian history another black page. In their rapacity, the border ruffians of Georgia violated the sacredness of treaties and with a vicious disregard for the rights of their legal owners, appropriated by violence the rich lands of the Cherokees. Gradually all the fine achievements of these splendid savages melted into thin air. When the United States Supreme Court decreed that the misappropriated Cherokee lands be returned to their rightful owners, President Jackson, a frontiersman and an Indian hater, defied its authority with his famous rebuke, "John Marshall has made his decision, now let him enforce it." Finally, after nearly nine years of agitation and disquietude, negotiations with the Government ended in the Ridge Treaty, an infamous concoction which was brazenly sustained. By its means the remaining fragment of what was once the Cherokee Nation were exiled at the point of the bayonet to a country beyond the Mississippi.

Unfortunately, the new home allotted to the Cherokees proved to be inhospitable. The land was claimed by the Osage as their ancestral hunting ground, and the already impoverished Cherokees had to hold it by force of arms. Nor were the Osage the sole authors of their woes.

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The Arkansas band resented this intrusion of their eastern brethren. Fratricidal war broke out and the tribe became further wasted. Warred on from without, and torn by strife within, the Cherokees, as a people, were in danger of extinction. Foreseeing this end, Sequoyah and others attempted to avert it. As President of the Council of the Arkansas band, he was largely instrumental in effecting a reunion which put an end to strife and declared the Eastern and Western Cherokee "one body politic under the style and title of the Cherokee Nation."

Sequoyah was by this time in his eighty-second year and well merited the boon of rest and relaxation. Lest he leave no margin to his life and crowd it to the very end in his devotion to his people, he retired from active political life. But his forceful mind denied his crippled and aged body the rest it deserved. Speculative ideas possessed him and he formulated a theory that he could devise a universal alphabet for the red man. Under the dominion of this newer and deeper ambition he came to feel that he had yet a mission to perform. Though his people had suffered an excess of calamity, his spirit was unbroken. Having sounded the depths of human disappointment, he rose again, full of courage and faith in the salvation of his race. Not in the habit of taking the advice of others and not having lost one jot of his most distinguishing characteristic—intensity of purpose—he determ-

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ined to make an investigation among the remote tribes of the West in search of some common element of speech.

Securing a few articles of Indian trade and loading these on an ox cart driven by a Cherokee boy, Sequoyah set out upon his last quest in 1843. Such a linguistic crusade the world will doubtless never again witness. Everywhere he was received by his red-skinned brothers of the plain and of the mountain with the utmost respect. Eagerly they furnished him with the means of prosecuting his inquiries. That reticence which they so notoriously displayed to Caucasian scientists was absent. Nor is this to be wondered at, for here was a scientist of their own race who had come to renown and they rested assured that he came not among them to discover their inferiorities or to prepare the way for exploitation.

With his boy companion he crossed the boundless plains, and, like Kipling's *Explorer*, "hurried on in hope of water or turned back in search of grass." Puzzling his way through the Rockies, he camped in meadows of softest velvet sweet with flowers, or above the tree line amid the grandeur of frost shattered peaks and perpetual snows. Then turning toward that scorched and waterless expanse unrelieved by the shade of a solitary tree, he crossed the Colorado Desert and entered the Mexican Sierras. Here, it is said, his boy companion died of exposure and hardship, and

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somewhere in the silent places of these desolate mountains this grand old man buried the lone partner of his wanderings.

An ancient myth current in the lodges of his forefathers told of a lost band of Cherokees who had wandered ages ago into northern Mexico. Vexed by chilling frosts and scorching heat, Sequoyah began a search for his lost kinsmen. Enfeebled of limb and yet strong of heart, he pursued his solitary way, ever straining toward the distant horizon to find what might be beyond. But he had over-estimated his strength, and not far from the Rio Grande, in the State of Tamaulipas, this "splendid wayfarer" reached the end of his trail and watched with fast-dimming eyes the pearl-gray smoke of his last camp-fire curl toward the heavens as he drew nearer to eternity.

The greatest of his race, Sequoyah sleeps beyond the Rio Grande. No monument marks the last resting place of this American Cadmus. His bones, denied the privilege of sepulchre, were picked by slinking wolves and wheeling buzzards, and left to bleach in the sun until the winds had buried them in the sands. His alphabet, too, is destined to pass away with his race, but his name will never pass into oblivion, for it is borne by the largest, the oldest, the most magnificent of trees, the noble Sequoia. This alone is sufficient to preserve his memory forever.

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